Service Manual

PIONEER®
The Art of Entertainment

ORDER NO.
CRT2145

MECHANISM ASSY
CASSETTE MECHANISM

NOTE:

- **This service manual describes the operation of the cassette mechanism incorporated in the models listed below.**
- **When performing repairs, use this manual together with the specific manual for the model under repair.**

Model	Service Manual	Mechanism Assy
KEH-1700/X1M/UC KEH-1750/X1M/ES	CRT2134	CZX3049
KEH-1700/X1M/EW KEH-1730/X1M/EW	CRT2133	CZX3050
KEH-1010QR/X1M/EE KEH-1050QR/X1M/ES KEH-1050QRS/X1M/ES	CRT2122	CZX2994
KEH-1030/X1M/ES KEH-1030SW/X1M/ES	CRT2122	

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Wheelock Place, Singapore 238880

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CASSETTE MECHANISM

(8) The Selector Gear ㊹ rotates by 180 degrees, and locks with the Gear Lock Arm ㊼.

(9) By a half rotation (180 degrees) of the Selector Gear ㊹, the Conversion Lever ㉔ and the FR Changing Arm Assy ④ move.

(10) The Pinch Arms (F) Assy (PS) and (R) Assy (PS) (⑭ and ⑬) and the Slide Switch(SW3) ⑩⓪ are switched by the FR Changing Arm Assy ④. At the same time, the Head(HD1) ⑨⑧ is moved upward and downward by the linked Adjuster Link (X) ㊻. The TU Gear Arm Assy ㊾ is switched by the FR Arm (A) Assy ⑩ and FF Arm ㊷ to change the direction (FWD and REV).

FWD operation

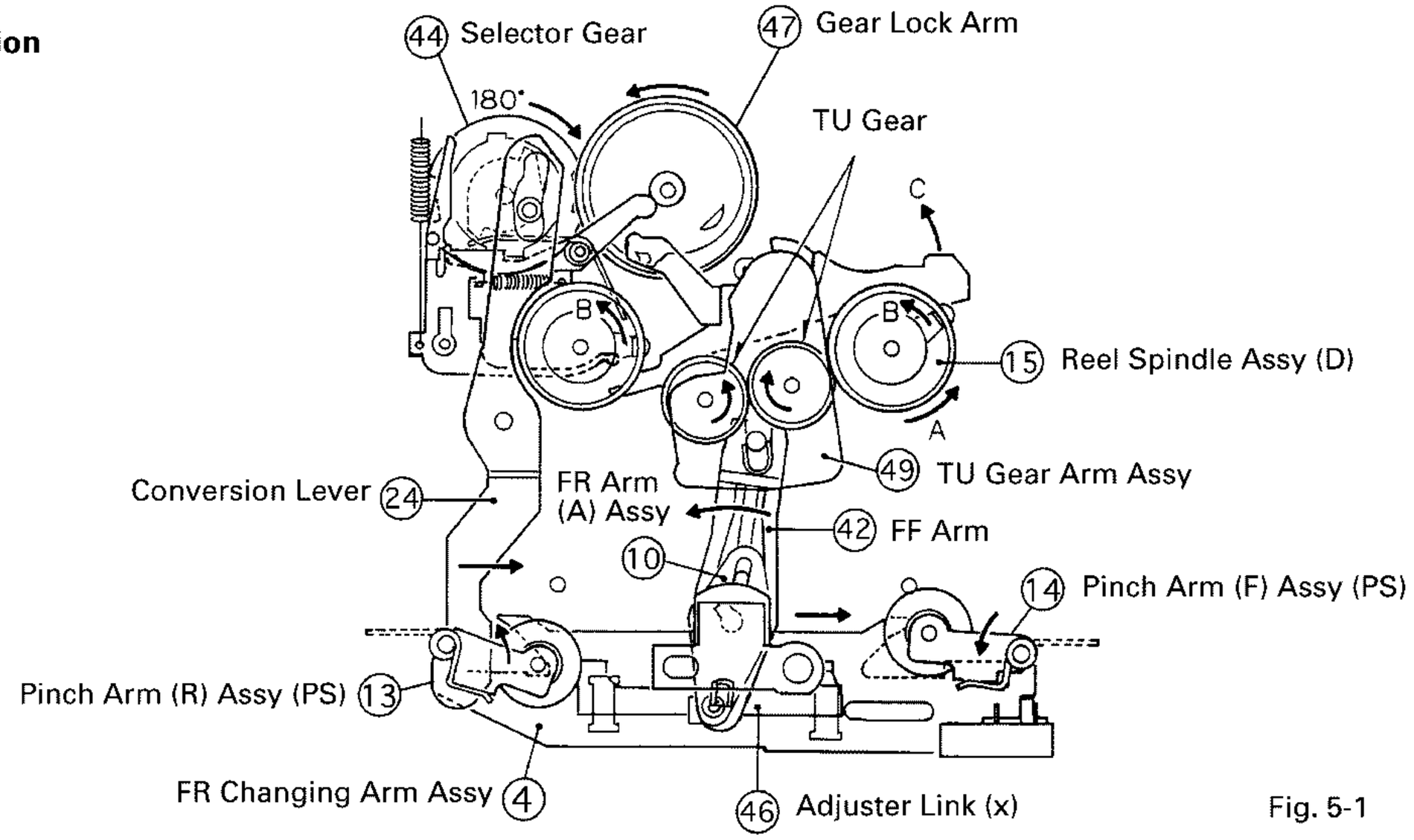


Fig. 5-1

REV operation

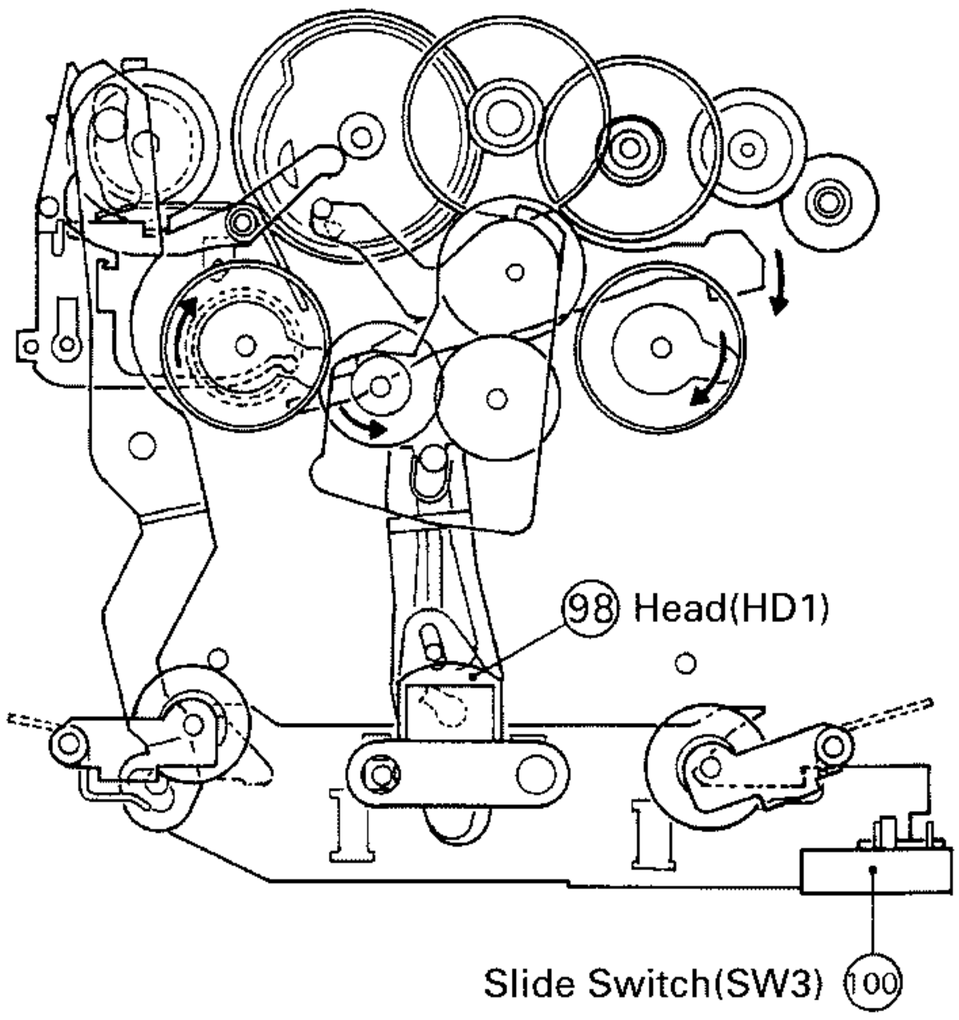


Fig. 5-2

4.2 MANUAL PROGRAM OPERATION

(1) Pressing the FF and REW Lever (AT) (㉚ and ㉛) simultaneously moves the Program Arm Ⓐ in the direction shown by the arrow, by the pressure of the Program Arm Spring ㉑. (Fig.6)

(2) The Program Arm Ⓐ is then moved further by the guiding hole of the lever.

(3) The movement of the Program Arm Ⓐ is conveyed to the Change Lever (B) ㉘, Selector Link (B) ㊻ , Ratchet ㊶ and then Gear Lock Arm ㊼.

(4) The Gear Lock Arm ㊼ is unlocked. The Dash Spring ㊼ causes the Selector Gear ㊹ to rush and engage with the Detector Gear ㊽. The Selector Gear ㊹ rotates.

(5) The projecting portion of the cam of the Selector Gear ㊹ taps the Ratchet ㊶. The Gear Lock Arm ㊼ is released from the Ratchet ㊶, returns to the given position, and locks the Selector Gear ㊹.

(6) Due to the Lock of the Gear Lock Arm ㊼, the Selector Gear ㊹ rotates by 180 degrees and stops.

(7) By a half rotation (180 degrees) of the Selector Gear ㊹, the Conversion Lever ㉔ and the FR Changing Arm Assy ④ moves.

(8) The Pinch Arm (F) Assy (PS) and (R) Assy (PS) (⑭ and ⑬) and the Slide Switch(SW3) ⑩⓪ are switched by the FR Changing Arm Assy ④. At the same time, the Head(HD1) ⑨⑧ is moved upward and downward by the linked Adjuster Link (X) ㊻. The TU Gear Arm Assy ㊾ is switched by the FR Arm (A) Assy ⑩ and FF Arm ㊷ to change the direction of rotation (FWD and REV) of the Reel Spindle Assy (D) ⑮.

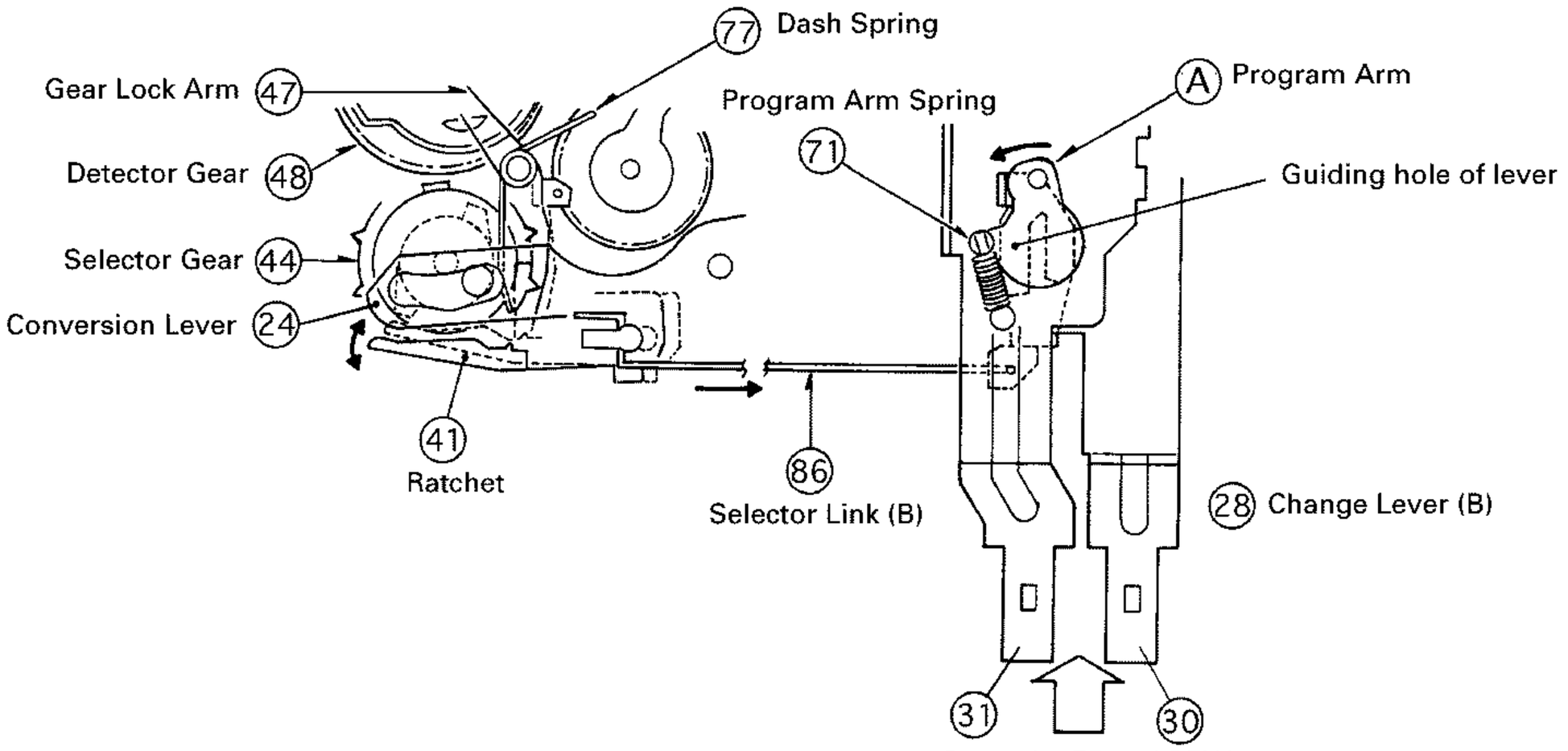


Fig. 6

4.3 AUTO REPLAY OPERATION

(1) When the rotation of the Reel Spindle Assy (D) ⑮ stops, the detection mechanism operates. (For the operation of the detection mechanism, refer to 4.1 OPERATION OF THE DETECTION MECHANISM.)

(2) After detection, the system operates in reverse. The FR Changing Arm Assy ④ moves and the linked Adjuster Link (X) ㊻ taps the Lock Arm (A) ㉗ to unlock the FF and REW Levers (AT) (㉚ and ㉛).

(3) The FF and REW Levers (AT) (㉚ and ㉛) return to the given position by the pressure of the FF/REW Lever Spring ㊹. Then the Head Plate Assy (S) ② is pushed out by the pressure of the Head Plate Spring ㊾.

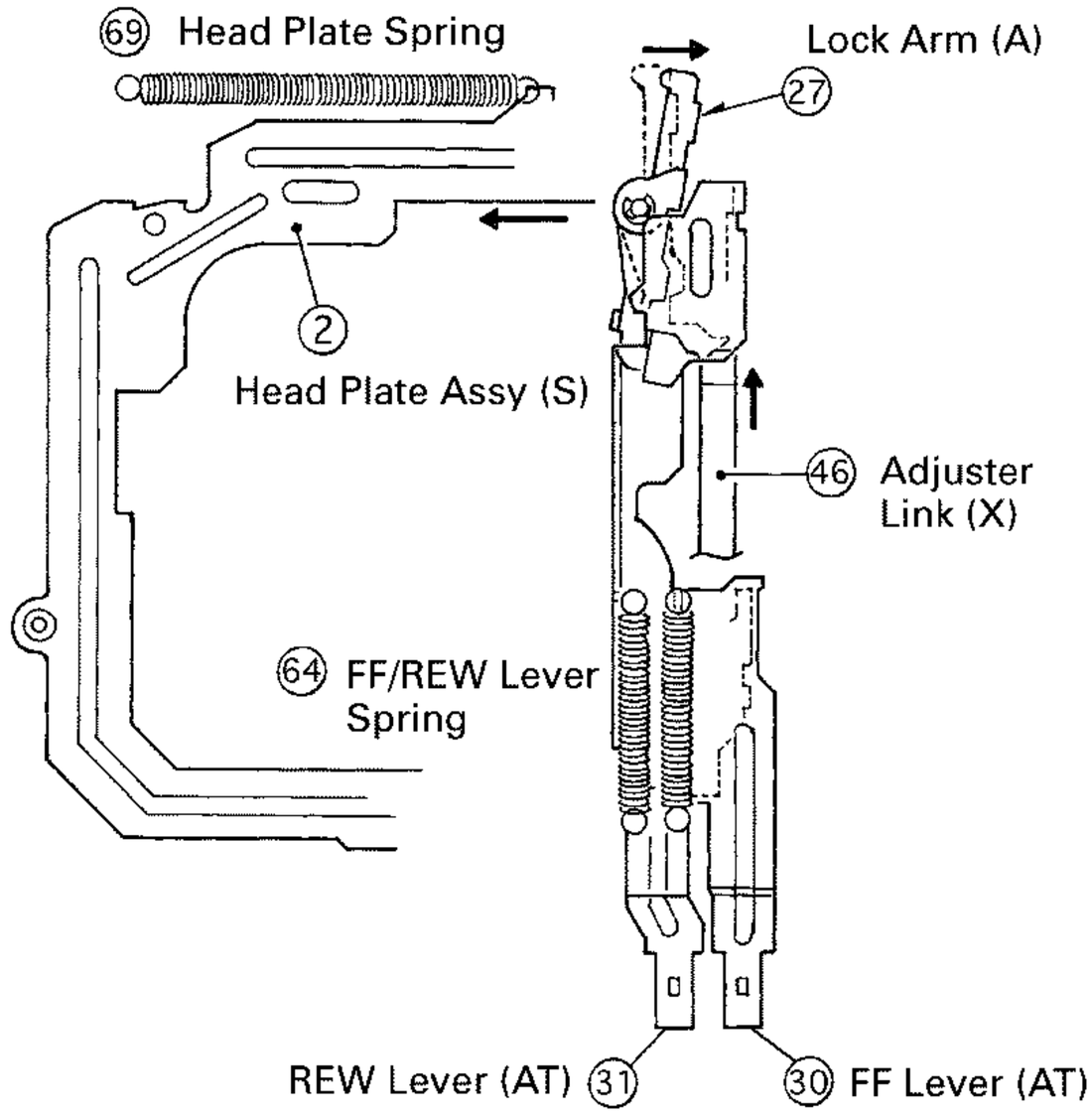


Fig. 7

4.4 CASSETTE INSERTION AND LOADING OPERATION

(1) Inserting a cassette rotates the Center Plate Spring (B) ㊽ in the reverse direction to activate pressure in the withdrawal direction.

(2) The Tape Hooker ㊷ withdraws the cassette by the pressure of the Spring.

(3) The Tape Hooker ㊷ taps the Eject Cam Lock Assy ⑥ to unlock the Eject Cam ⑳. Then the Eject Cam ⑳ moves in the direction shown by an arrow in the Fig.8.

(4) The Eject Cam ⑳ lowers the Cassette Hanger (X) ㉒, and the Head Plate Assy (S) ② moves forward.

(5) The tooth of the Cassette Hanger (X) ㉒ shifts the Power Switch(SW1) ㊾ to ON.

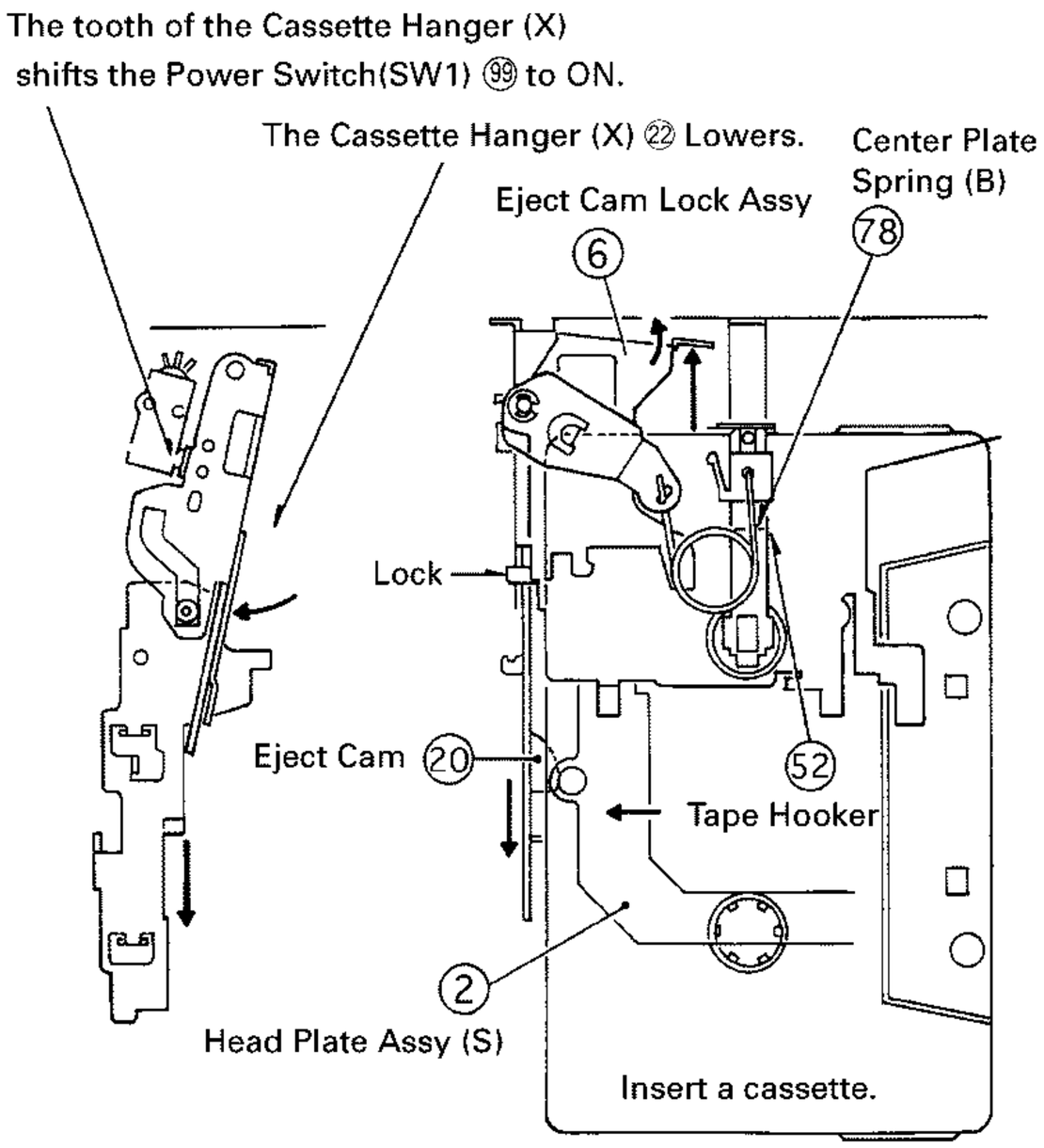


Fig. 8

4.5 MUTE MECHANISM

(1) Pressing the FF Lever (AT) ㉚ or REW Lever (AT) ㉛ (FF/REW operation) retracts the Head Plate Assy (S) ②.

(2) When the Head Plate Assy (S) ② retracts, the Mute Arm (N) ㊶ presses the Mute Switch(SW2) ㉒ to shift it to ON.

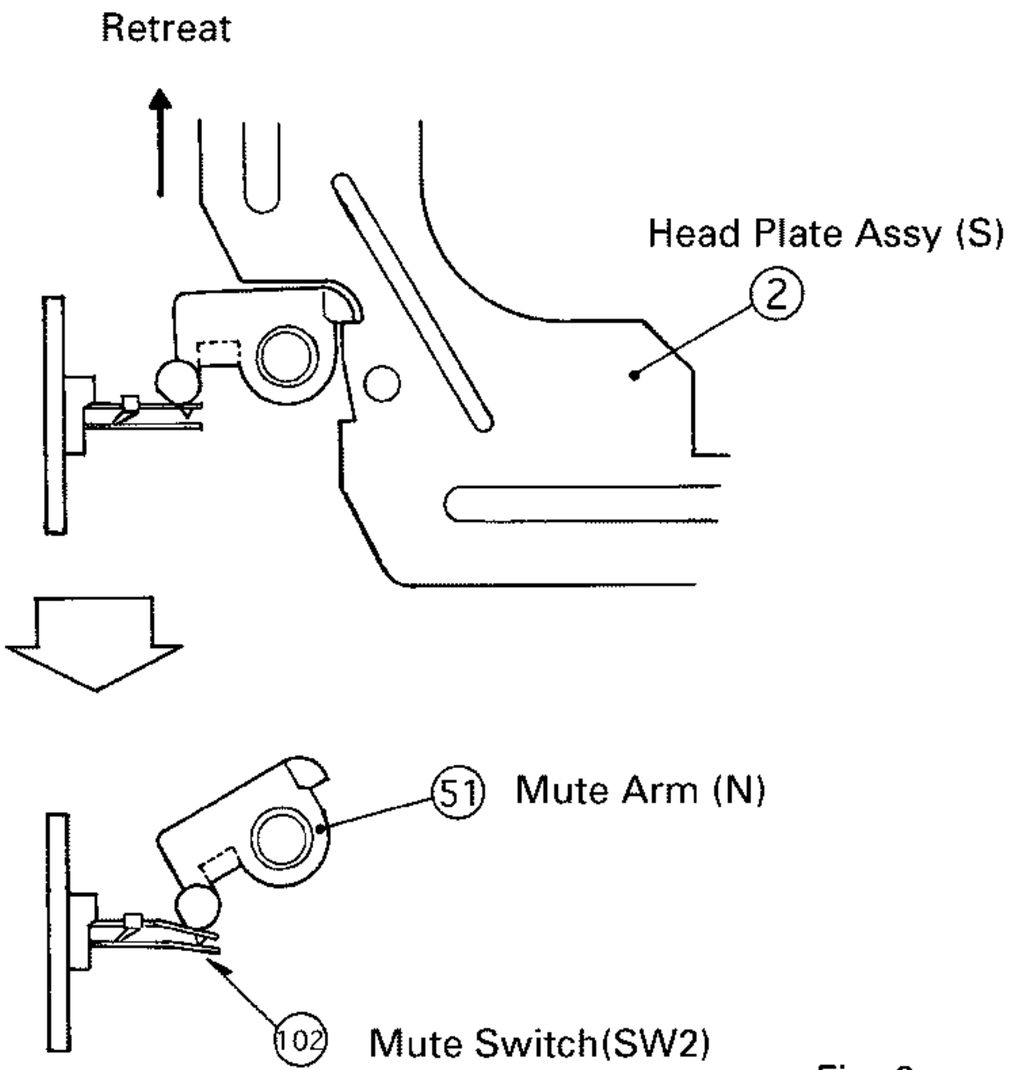


Fig. 9

4.6 FF OPERATION (IN THE FWD DIRECTION)

(1) When the FF Lever (AT) ㉚ is pressed, it locks with the Lock Arm (A) ㉗.

(2) The tilted portion of the FF Lever (AT) ㉚ retracts the Head Plate Assy (S) ②. When the Head Plate Assy (S) ② moves backward, the Pinch Arm (F) Assy (PS) ⑭ moves away from the Flywheel Assy (BF) ⑫.

(3) Then, the Reel Spindle Assy (D) ⑮ rewinds the tape (with the clutch mechanism inactivated).

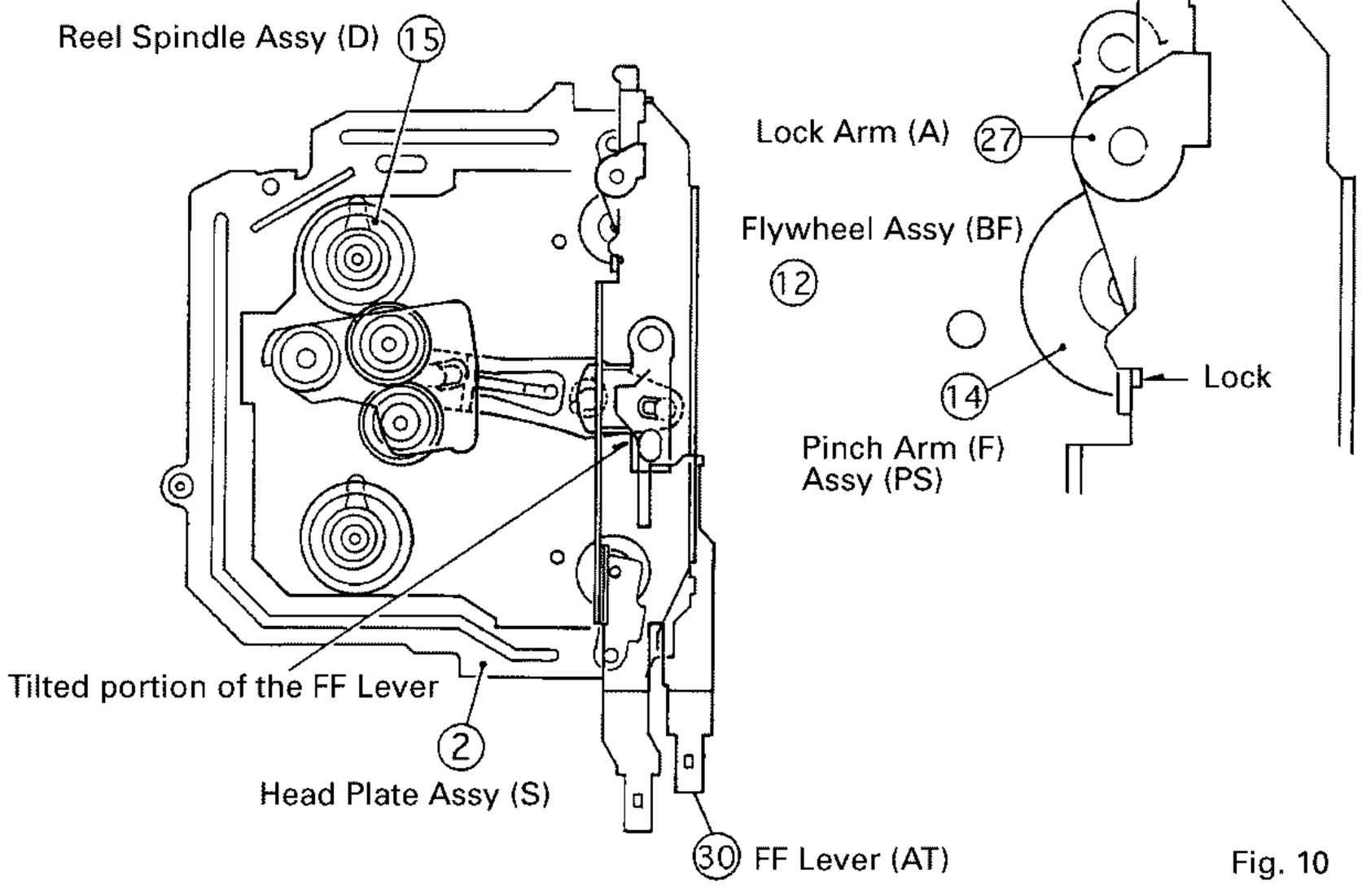


Fig. 10

4.7 REW OPERATION (IN THE FWD DIRECTION)

(1) When the REW Lever (AT) ㉛ is pressed, it locks with the Lock Arm (A) ㉗.

(2) The tilted portion of the REW Lever (AT) ㉛ retracts the Head Plate Assy (S) ②. When the Head Plate Assy (S) ② moves backward, the Pinch Arm (F) Assy (PS) ⑭ moves away from the Flywheel Assy (BF) ⑫.

(3) The tooth of the REW Lever (AT) ㉛ presses the Change Lever (B) ㉘. The Change Lever (B) ㉘ links to the FR Arm (B) ㉙, FF Arm ㊷, and then TU Gear Arm Assy ㊾.

(4) The TU Gear Arm Assy ㊾ moves toward the opposite side of the Reel Spindle Assy (D) ⑮ for the playback and engages with the other Reel Spindle Assy (D) ⑮ to rewind the tape.

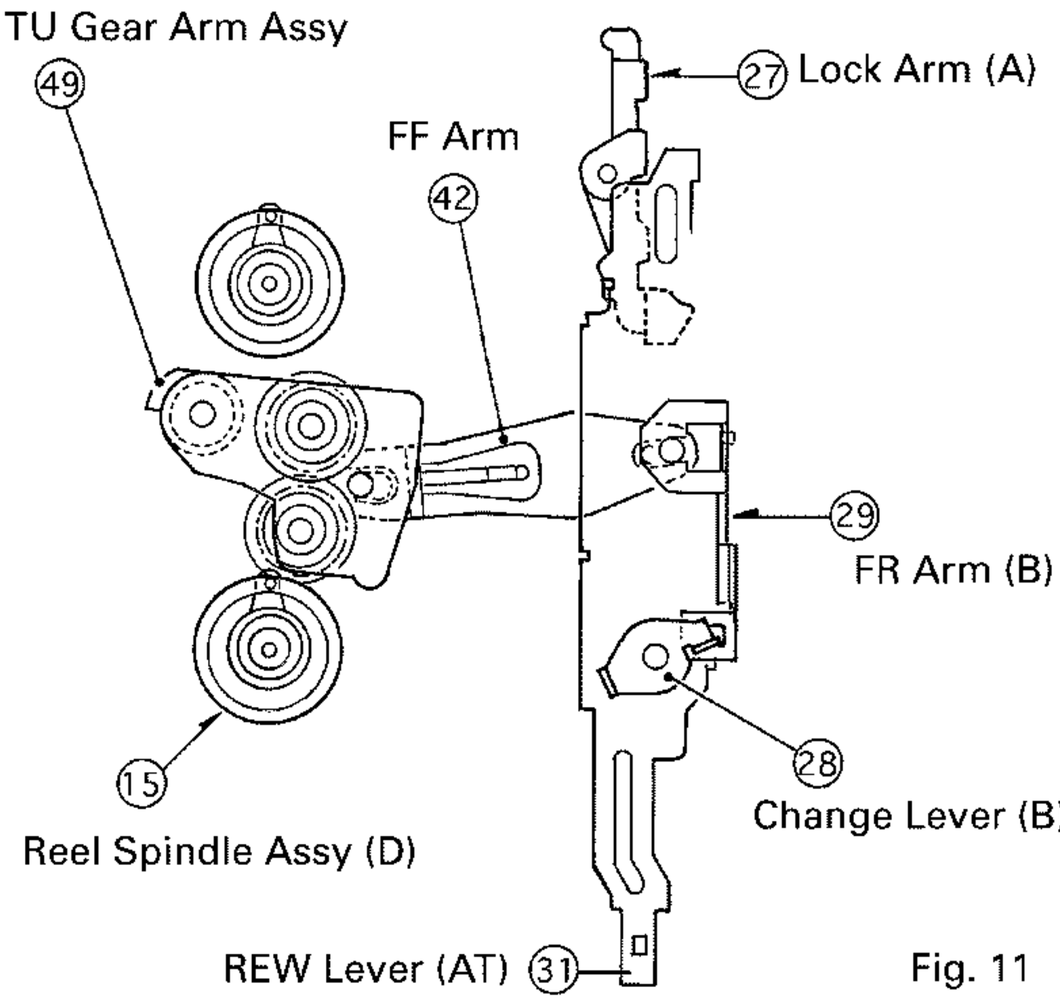


Fig. 11

4.8 AMS OPERATION

(1) The FF and REW Levers (AT) (㉚ and ㉛) are locked by the Lock Arm (A) ㉗.

(2) The Release Arm ㉜ is pulled by the Plunger(SO1) ㉞.

(3) The Release Arm ㉜ strikes the Lock Arm (A) ㉗ to unlock it.

(4) The FF and REW Levers (AT) (㉚ and ㉛) are returned by the pressure of the FF/REW Lever Spring ㊹, the Head Plate Assy (S) ② is pushed out, and the system plays back.

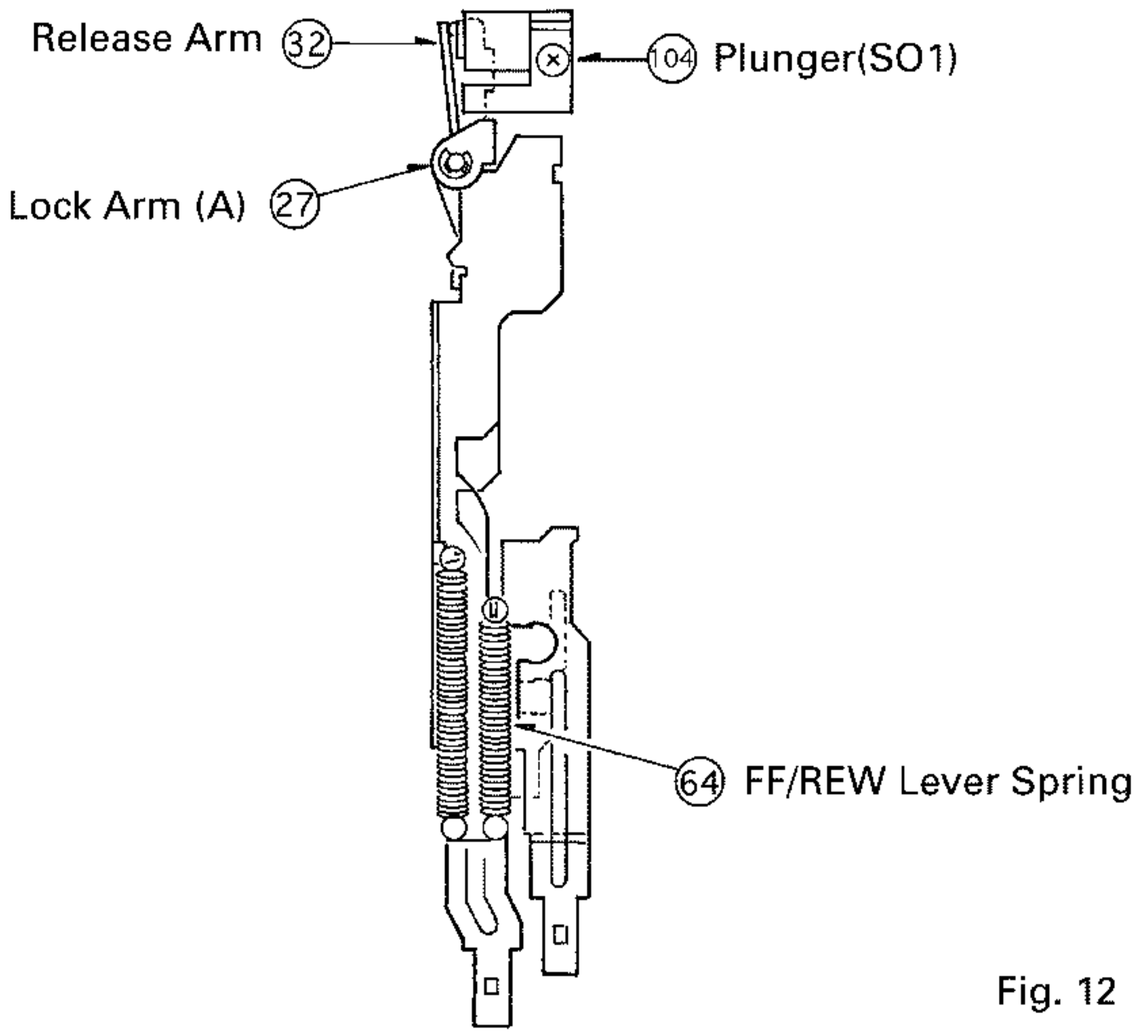


Fig. 12

4.9 EJ OPERATION (CASSETTE EJECTION)

(1) Press the Eject Lever ㉑. The Eject Lever ㉑ pushes the Eject Cam ⑳. The cam (tilted portion) of the Eject Cam ⑳ retracts the Head Plate Assy (S) ②.

(2) Then, the Head Plate Assy (S) ② pushes the Pinch Arm (F) Assy (PS) and (R) Assy (PS) (⑭ and ⑬) to retract them.

(3) The Cassette Hanger (X) ㉒ is lifted by the projected portion of the Eject Cam ⑳. The lifted Cassette Hanger (X) ㉒ shifts the Power Switch(SW1) ㊾ to OFF. At the same time, the Return Link ㊽ pushes the Center Plate ㉖ to rotate the Center Plate Spring (B) ㊽ in the reverse direction.

(4) The pressure of the Center Plate Spring (B) ㊽ causes the Tape Hooker ㊷ to move toward the ejection direction. The Tape Hooker ㊷ moves the Eject Cam Lock Assy ⑥ to lock the Eject Cam ⑳.

(5) The cassette is ejected by the Tape Hooker ㊷.

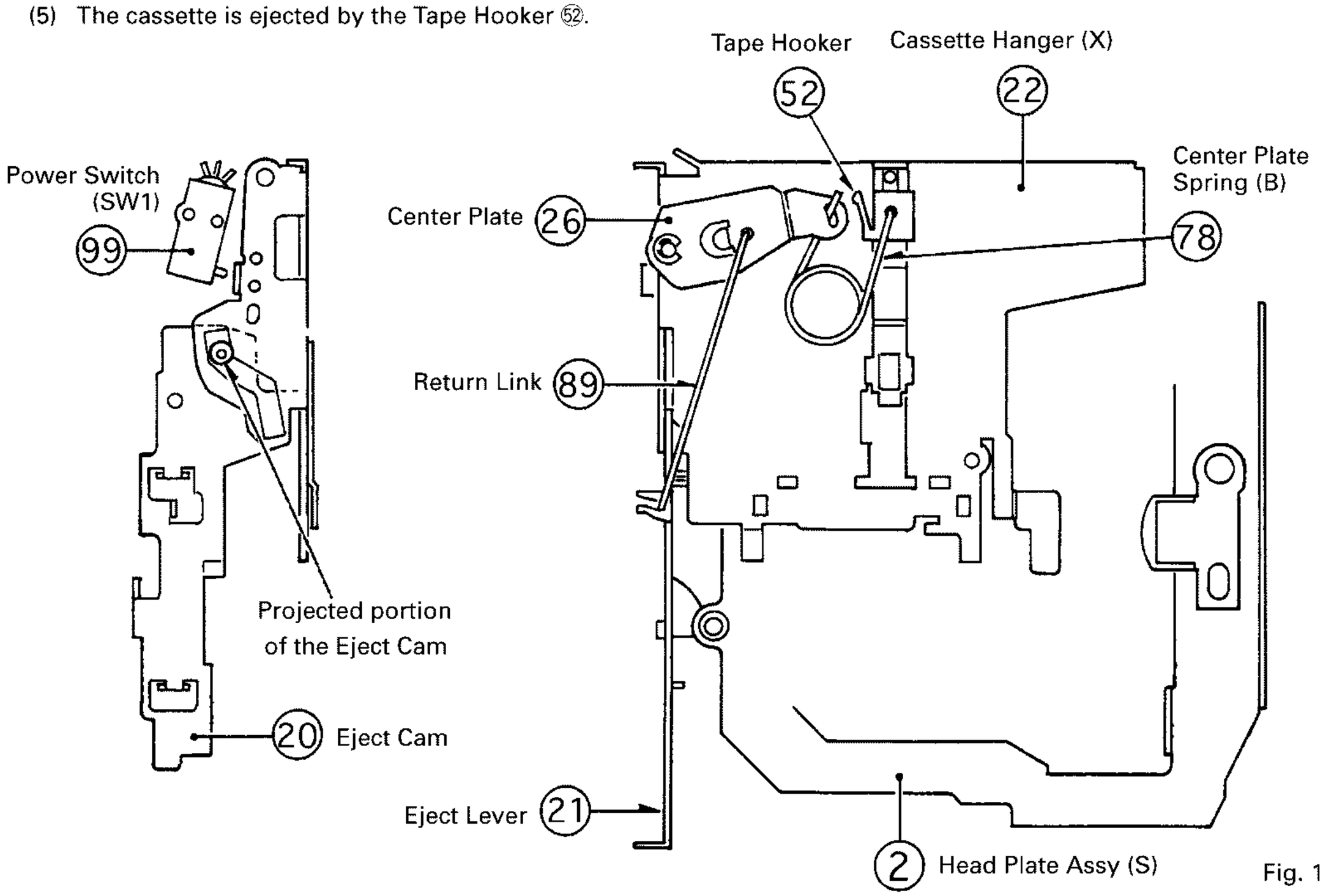
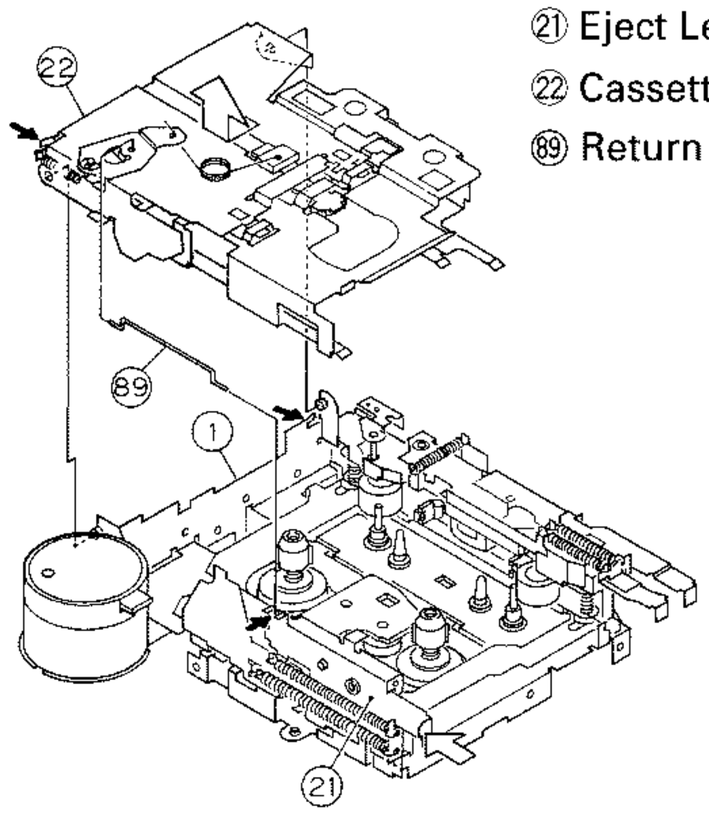
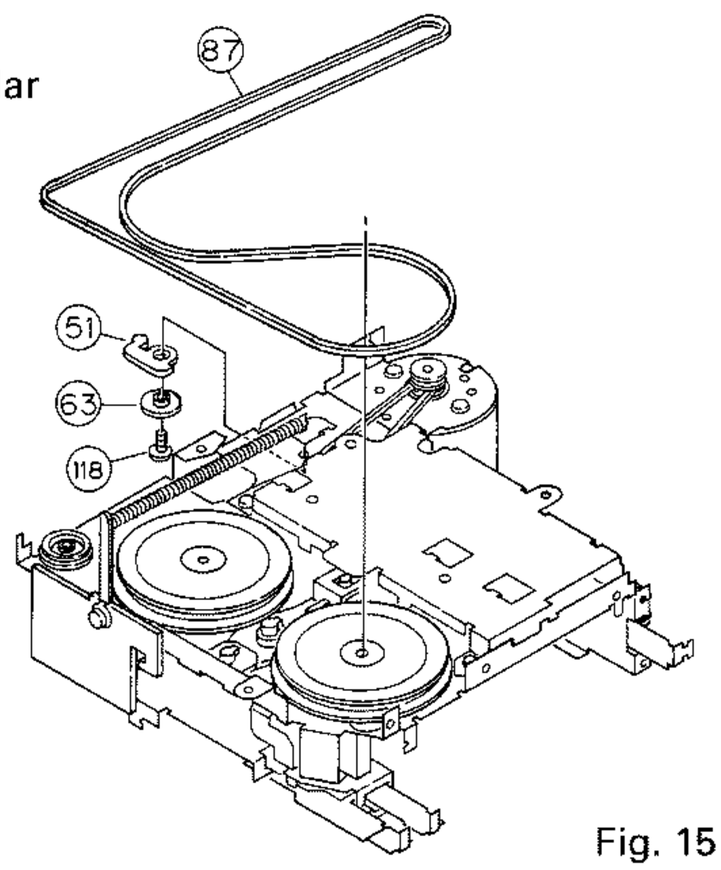
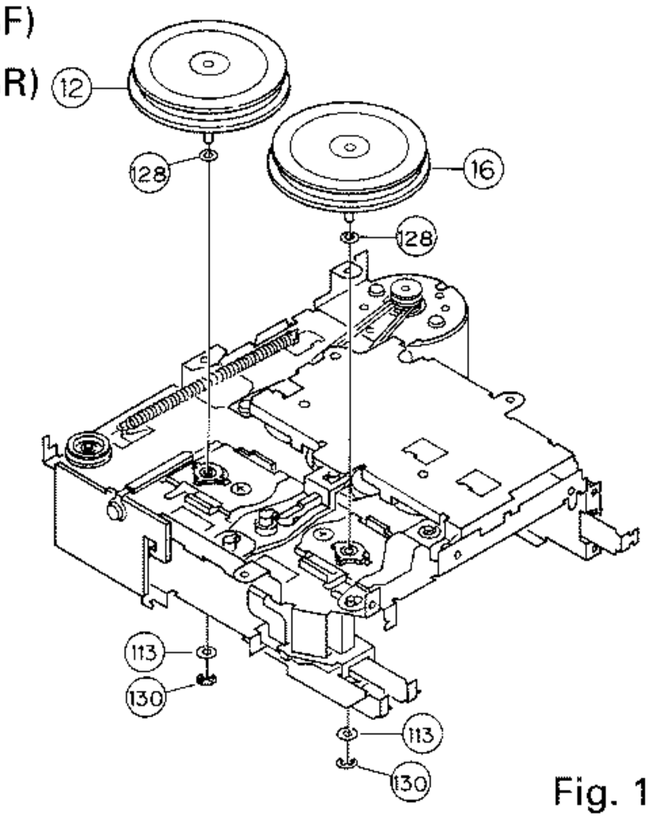
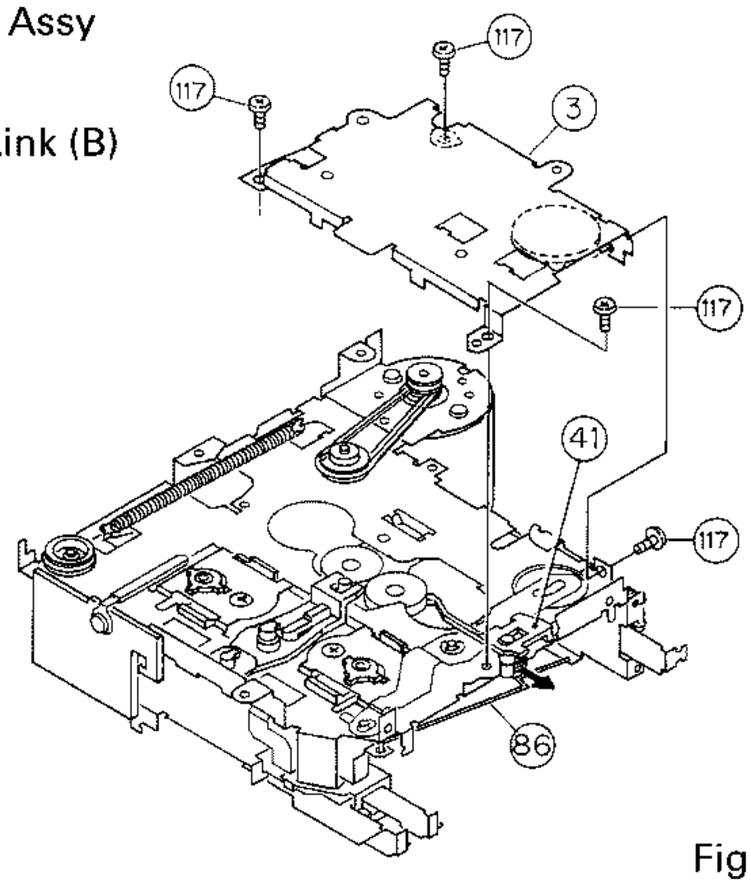
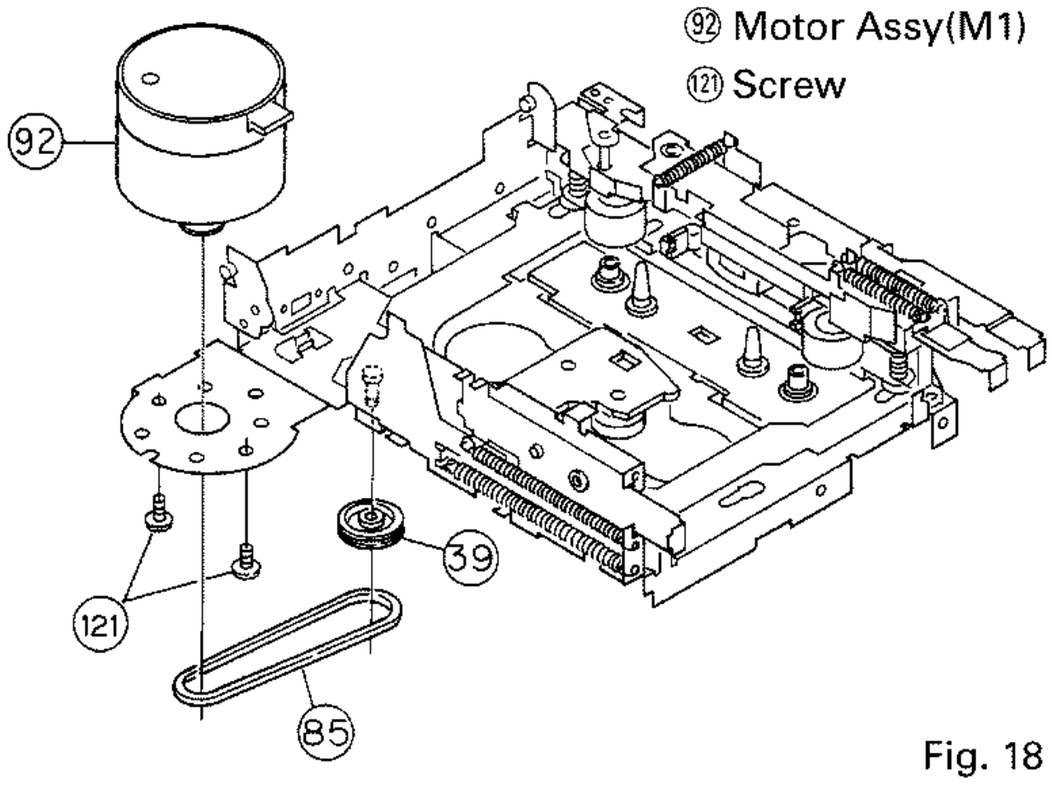
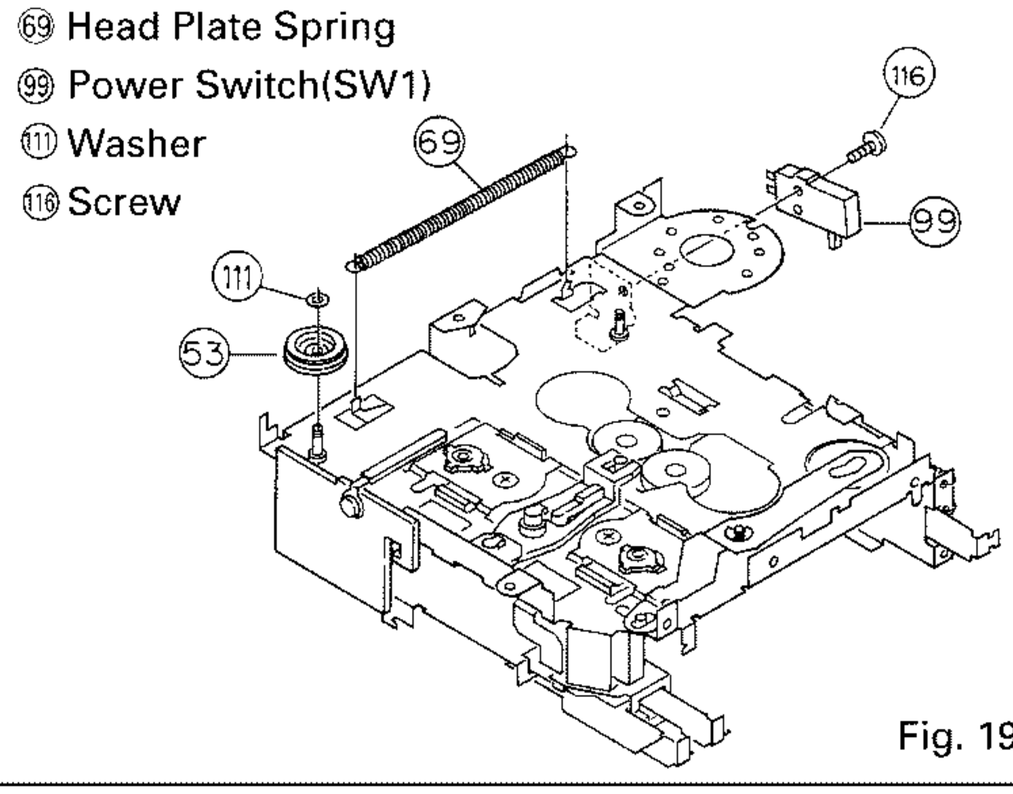
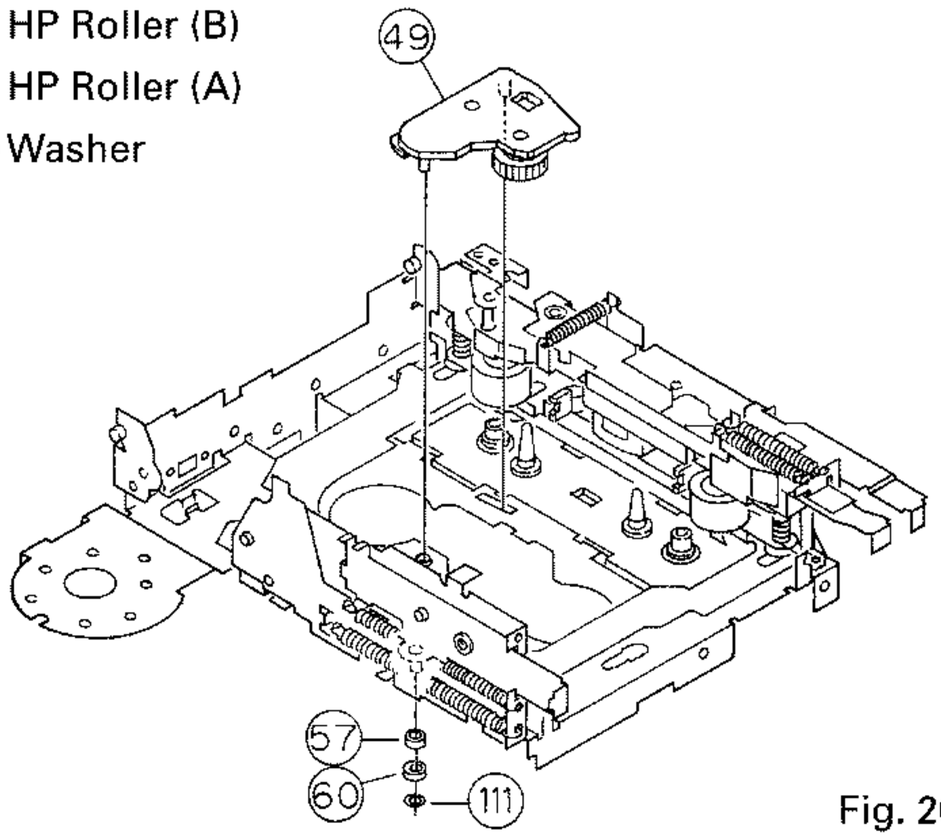
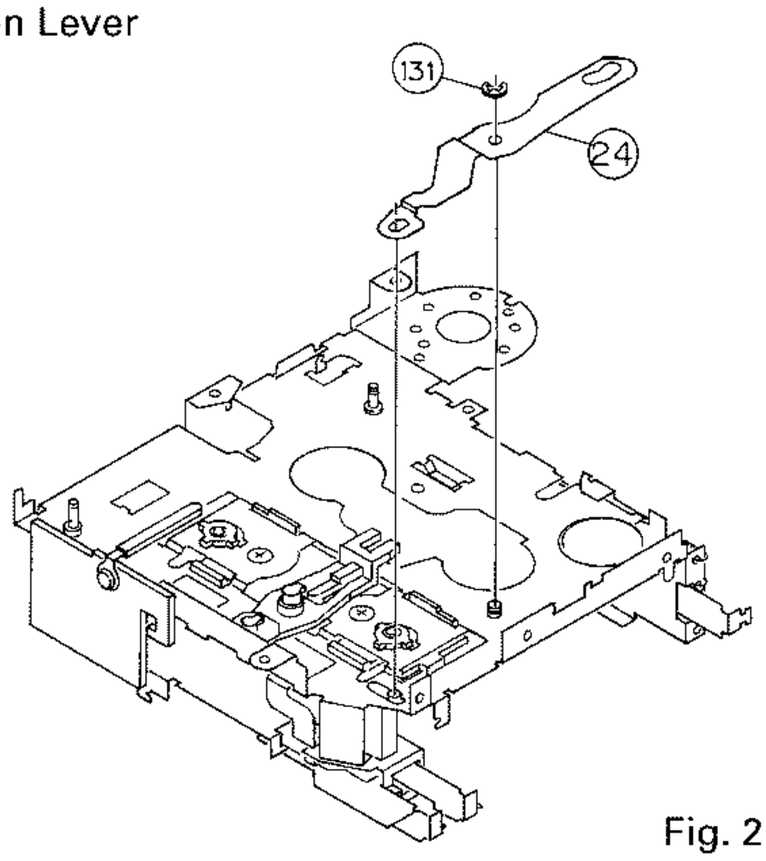
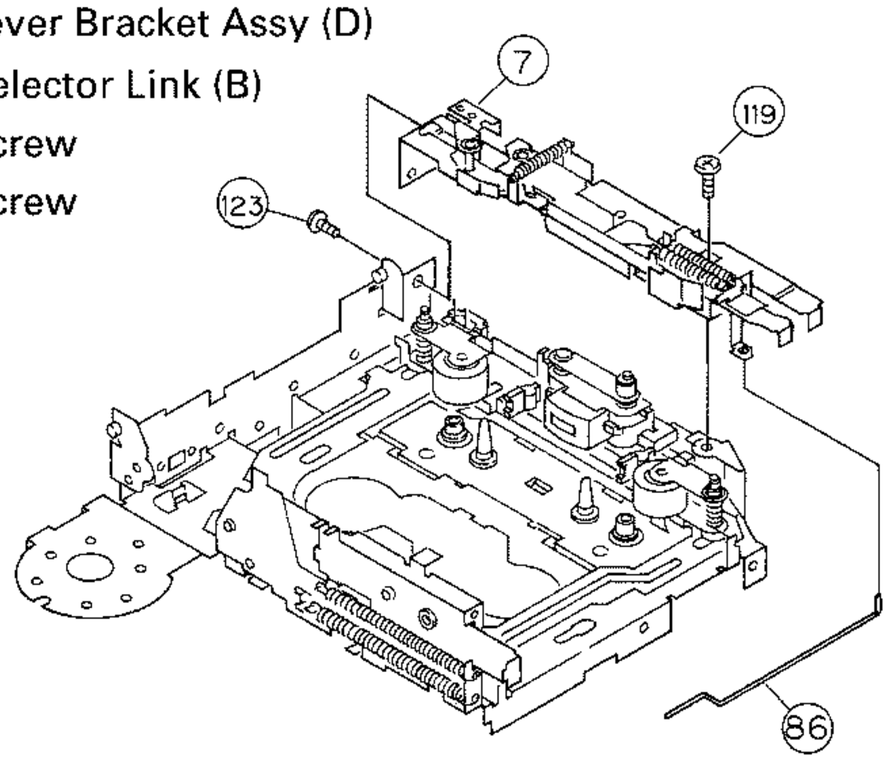


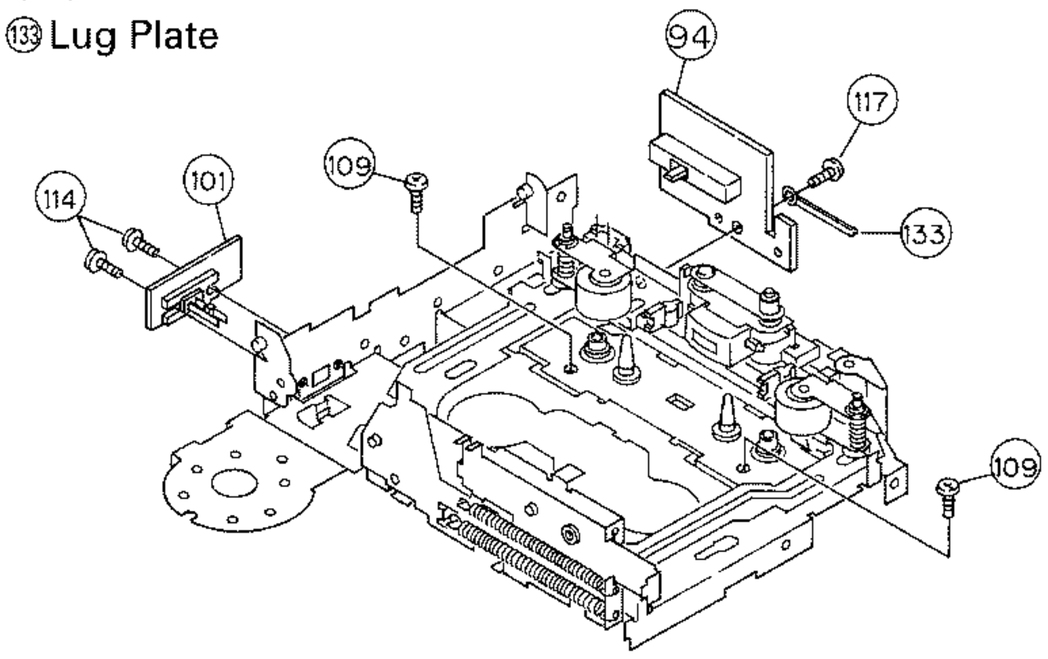
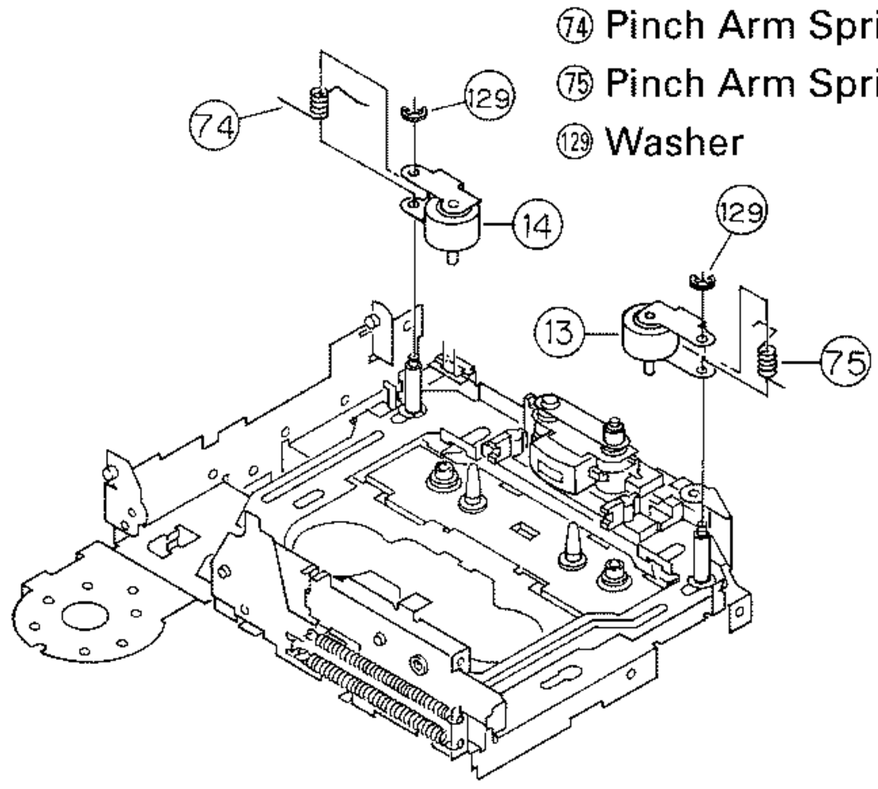
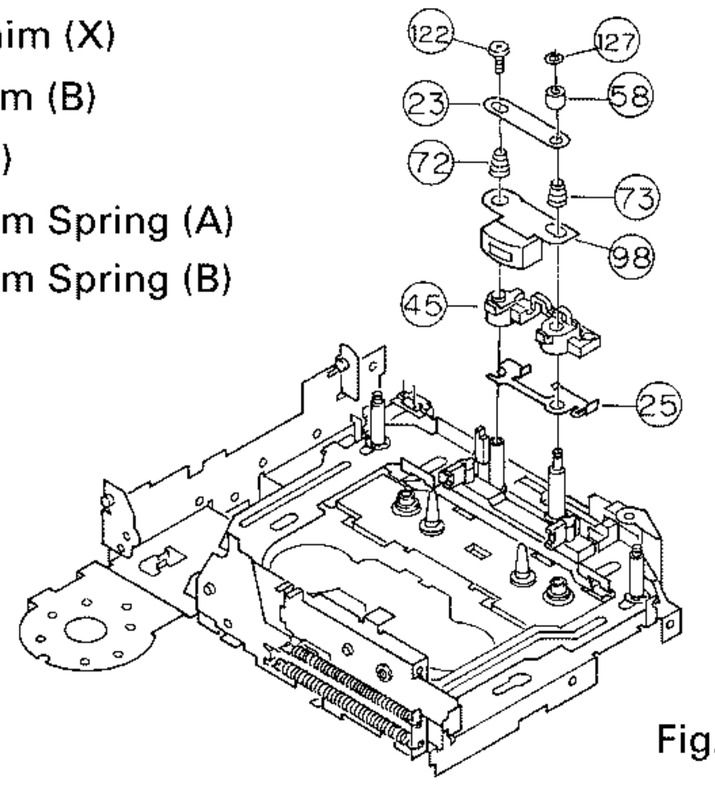
Fig. 13

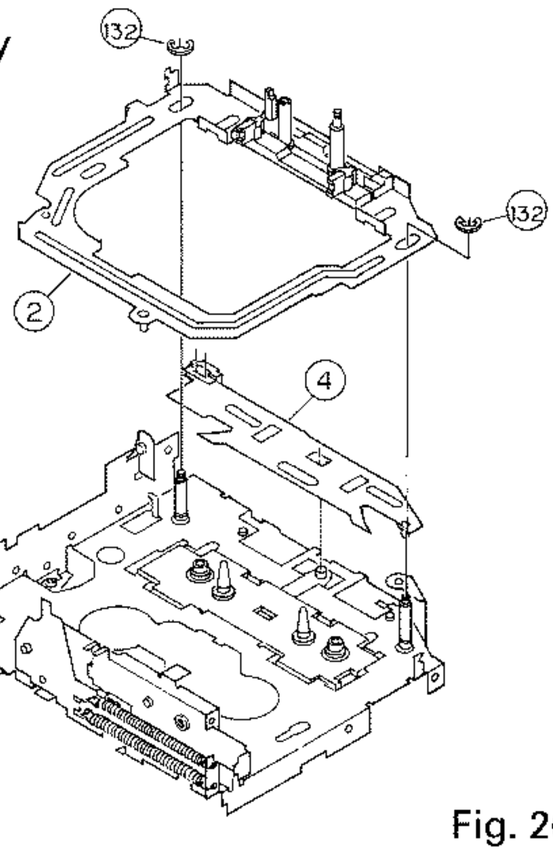
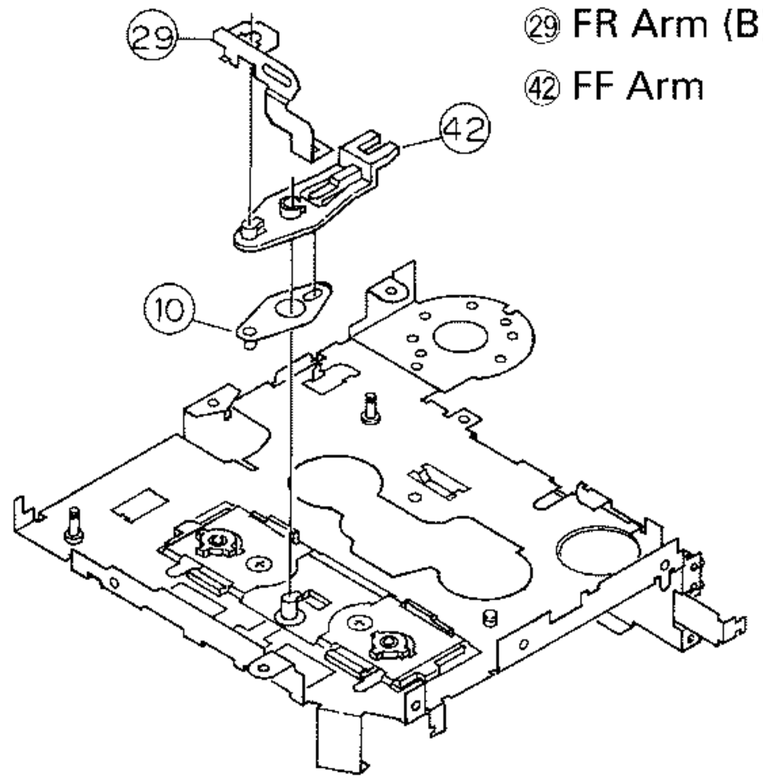
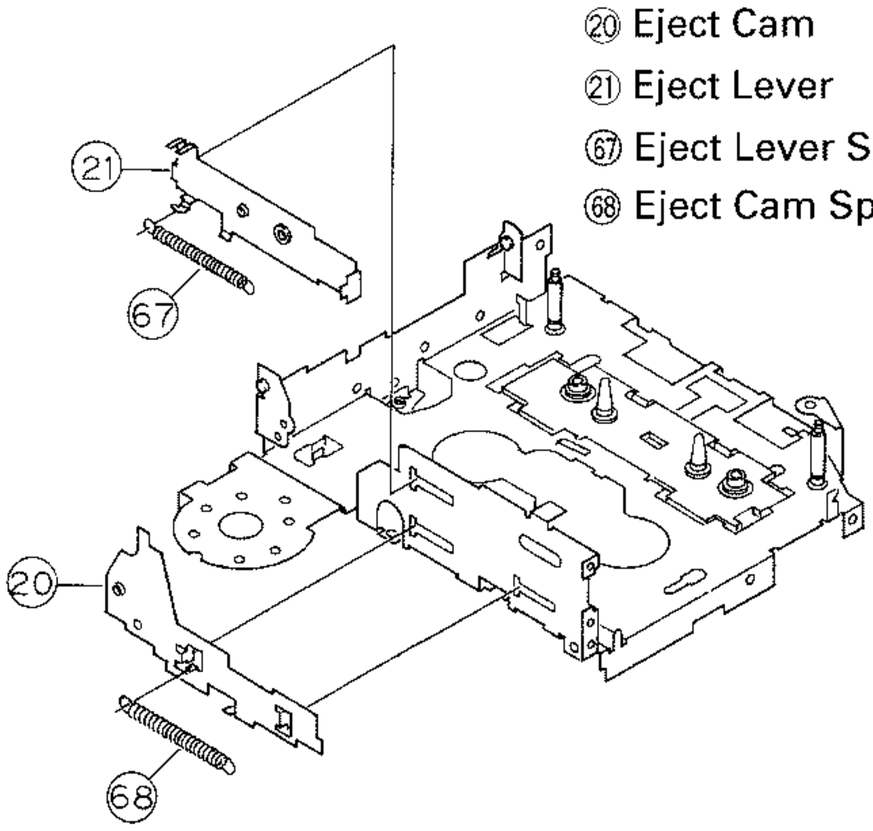
5. DISASSEMBLY PROCEDURES

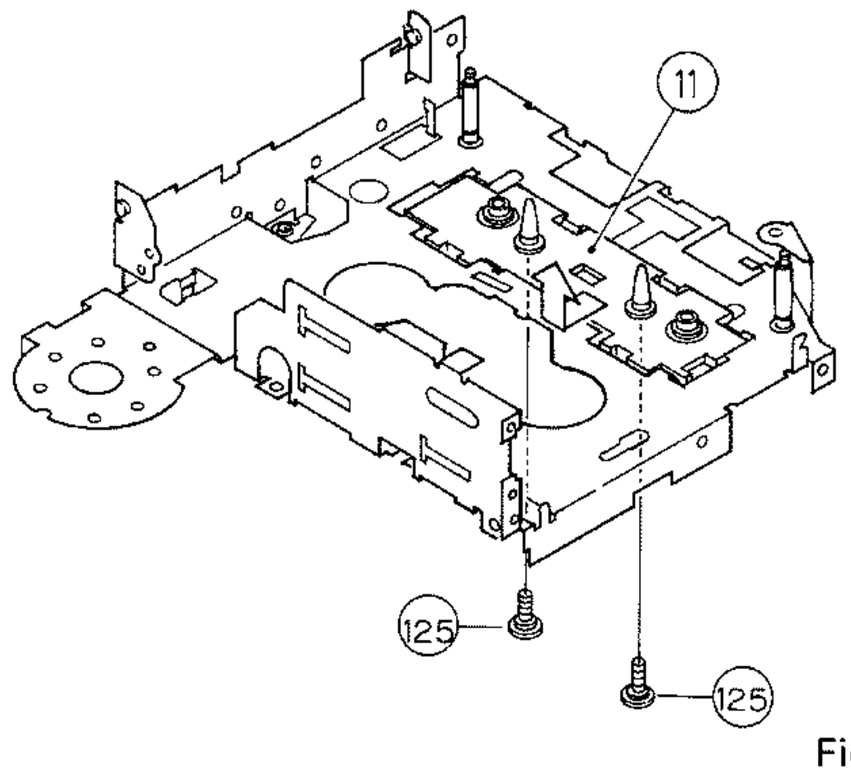
1	1-1 Open the teeth of the Eject Lever ㉑, Cassette Hanger (X) ㉒ and Main Chassis Assy ①. 1-2 While depressing the Eject Lever ㉑, shift the Cassette Hanger (X) ㉒ toward the left side and remove it.	① Main Chassis Assy ㉑ Eject Lever ㉒ Cassette Hanger (X) ㊽ Return Link  Fig. 14
2	2-1 Remove the Main Belt ㊼. Be careful not to damage or stain the belt with oil or grease. 2-2 Remove the Screw ⑱ to remove the Mute Arm Collar ㊸ and Mute Arm (N) ㊶.	㊶ Mute Arm (N) ㊸ Mute Arm Collar ㊼ Main Belt ⑱ Screw  Fig. 15
3	3-1 Remove the washers ㉚and the washers ㉓. 3-2 Remove the Flywheel Assys ⑫, ⑯.	⑫ Flywheel Assy (BF) ⑯ Flywheel Assy (BR) ㉓ Washer ㉘ Washer ㉚ Washer  Fig. 16

4	4-1 Remove the Selector Link (B) ⑧⑥ from the tooth of the Ratchet ④①. 4-2 Loosen the four Screws ①①⑦ to remove the Reel Base Assy ③.	③ Reel Base Assy ④① Ratchet ⑧⑥ Selector Link (B) ①①⑦ Screw  Fig. 17
5	5-1 Remove the Sub Belt (C) ⑧⑤ , Be careful not to damage or stain the belt with oil or grease. 5-2 Remove the Pulley Gear ③⑨. 5-3 Loosen the Screws ①②① and remove the Motor Assy(M1) ⑨③ .	③⑨ Pulley Gear ⑧⑤ Sub Belt (C) ⑨② Motor Assy(M1) ①②① Screw  Fig. 18
6	6-1 Loosen the Screw ①①⑥ to remove the Power Switch(SW1) ⑨⑨. 6-2 Remove the Idle Pulley (A) ⑤③. 6-3 Remove the Head Plate Spring ⑥⑨.	⑤③ Idle Pulley (A) ⑥⑨ Head Plate Spring ⑨⑨ Power Switch(SW1) ①①① Washer ①①⑥ Screw  Fig. 19

7	7-1 Remove the TU Gear Arm Assy ㊾. 7-2 Remove the Washer ⑪ to remove the HP Roller (A) ㊿ and HP Roller (B) ㊼.	㊾ TU Gear Arm Assy ㊼ HP Roller (B) ㊿ HP Roller (A) ⑪ Washer  Fig. 20
8	8-1 Remove the Washer ㉛ to remove the Conversion Lever ㉔.	㉔ Conversion Lever ㉛ Washer  Fig. 21
9	9-1 Remove the Screws⑲, ㉓ to remove the Lever Bracket Assy (D) ⑦. 9-2 Remove the Selector Link (B)㊻ .	⑦ Lever Bracket Assy (D) ㊻ Selector Link (B) ⑲ Screw ㉓ Screw  Fig. 22

10	10-1 Remove the two Screws ⑭ to remove the Mute PWB ⑩①. 10-2 Remove the Screw ⑪⑦ to remove the SW PWB ⑨④ . 10-3 Remove the two Screws ⑩⑨.	⑨④ SW PWB ⑩① Mute PWB ⑩⑨ ⑭ ⑪⑦ Screw ⑬③ Lug Plate  Fig. 23
11	11-1 Remove the Washer ⑫⑨ to remove the Pinch Arm (F) Assy (PS) ⑭ and Pinch Arm Spring (F) ⑦④. 11-2 Remove the Washer ⑫⑨ to remove the Pinch Arm (R) Assy (PS) ⑬ and Pinch Arm Spring (R) ⑦⑤.	⑬ Pinch Arm (R) Assy (PS) ⑭ Pinch Arm (F) Assy (PS) ⑦④ Pinch Arm Spring (F) ⑦⑤ Pinch Arm Spring (R) ⑫⑨ Washer  Fig. 24
12	12-1 Remove the Washer ⑫⑦ and Screw ⑫②. Remove the FF Roller (C) ⑤⑧, SPG Support Plate ②③, Adjuster Arm Spring ⑦②, ⑦③ ,Head(HD1) ⑨⑧, Adjuster Arm (B) ④⑤ and Adjuster Shim (X) ②⑤.	②③ SPG Support Plate ②⑤ Adjuster Shim (X) ④⑤ Adjuster Arm (B) ⑤⑧ FF Roller (C) ⑦② Adjuster Arm Spring (A) ⑦③ Adjuster Arm Spring (B) ⑨⑧ Head(HD1) ⑫② Screw ⑫⑦ Washer  Fig. 25

13	13-1 Remove the two Washers ⑬② to remove the Head Plate Assy (S) ②. 13-2 Remove the FR Changing Arm Assy ④.	② Head Plate Assy (S) ④ FR Changing Arm Assy ⑬② Washer  Fig. 26
14	14-1 Move the FR Arm (B) ㉙ toward the Idle Pulley (A) Shaft, then remove it from the tooth of the FF Arm ㊷. 14-2 Move the FF Arm ㊷ to the FWD side. Disengage the projecting portion from the hole of the FR Arm (A) Assy ⑩ to remove the FF Arm ㊷. 14-3 Remove the FR Arm (A) Assy ⑩.	⑩ FR Arm (A) Assy ㉙ FR Arm (B) ㊷ FF Arm  Fig. 27
15	15-1 Remove the Eject Lever Spring ⑥⑦ and Eject Cam Spring ⑥⑧. 15-2 Remove the Eject Lever ㉑ and Eject Cam ⑳.	⑳ Eject Cam ㉑ Eject Lever ⑥⑦ Eject Lever Spring ⑥⑧ Eject Cam Spring  Fig. 28

16	16-1 Remove the two Screws ⑫⑤. Move the CM Bracket Assy (PH) ⑪ in the direction shown by the arrow, then remove the CM Bracket Assy(PH) ⑪.	⑪ CM Bracket Assy (PH) ⑫⑤ Screw  Fig. 29

1. FLOWCHART OF OPERATIONAL PART MOVEMENT

Operation	Operation system	Mechanism operation
Press the FF/REW Levers (AT) simultaneously.	(A) Program Arm → (B) Change Lever → (86) Selector Link (B) → (41) Ratchet → (47) Gear Lock Arm → (44) Selector Gear → (24) Conversion Lever → (4) FR Changing Arm Assy → (10) FR Arm (A) Assy → (42) FF Arm → (49) TU Gear Arm Assy → (15) Reel Spindle Assy (D) (4) FR Changing Arm Assy → (13) Pinch Arm (R) Assy (PS), (14) Pinch Arm (F) Assy (PS) (4) FR Changing Arm Assy → (46) Adjuster Link (X) → (45) Adjuster Arm (B) → (98) Head (HD1)	Direction operation
Press the FF/REW Levers (AT).	(27) Lock Arm (A) → (28) Change Lever (B) → (29) FR Arm (B) → (42) FF Arm → (49) TU Gear Arm Assy (2) Head Plate Assy (S) → (13) Pinch Arm (R) Assy (PS) (2) Head Plate Assy (S) → (14) Pinch Arm (F) Assy (PS)	
	(15) Reel Spindle Assy (D)	FF/REW operation
	(50) Detector Cam Assy → (43) Sensor Arm → (48) Detector Gear → (47) Gear Lock Arm → (44) Selector Gear → (24) Conversion Lever → (4) FR Changing Arm Assy → (46) Adjuster Link (X) → (27) Lock Arm (A) → (30) (31) FF/REW Lever (AT) → (2) Head Plate Assy (S) → (15) Reel Spindle Assy (D)	Auto replay operation
	(4) FR Changing Arm Assy → (13) Pinch Arm (R) Assy (PS) (4) FR Changing Arm Assy → (14) Pinch Arm (F) Assy (PS) (4) FR Changing Arm Assy → (10) FR Arm (A) Assy → (42) FF Arm → (49) TU Gear Arm Assy (46) Adjuster Link (X) → (45) Adjuster Arm (B)	
	(32) Release Arm → (27) Lock Arm (A) → (30) (31) FF/REW Lever (AT) → (2) Head Plate Assy (S)	AMS operation
Press the Eject Lever.	(20) Eject Cam → (89) Return Link → (26) Center Plate → (78) Center Plate Spring (B) → (52) Tape Hooker	Ejection operation
	(20) Eject Cam → (2) Head Plate Assy (S) (20) Eject Cam → (22) Cassette Hanger (X)	

2. NAMES OF PARTS

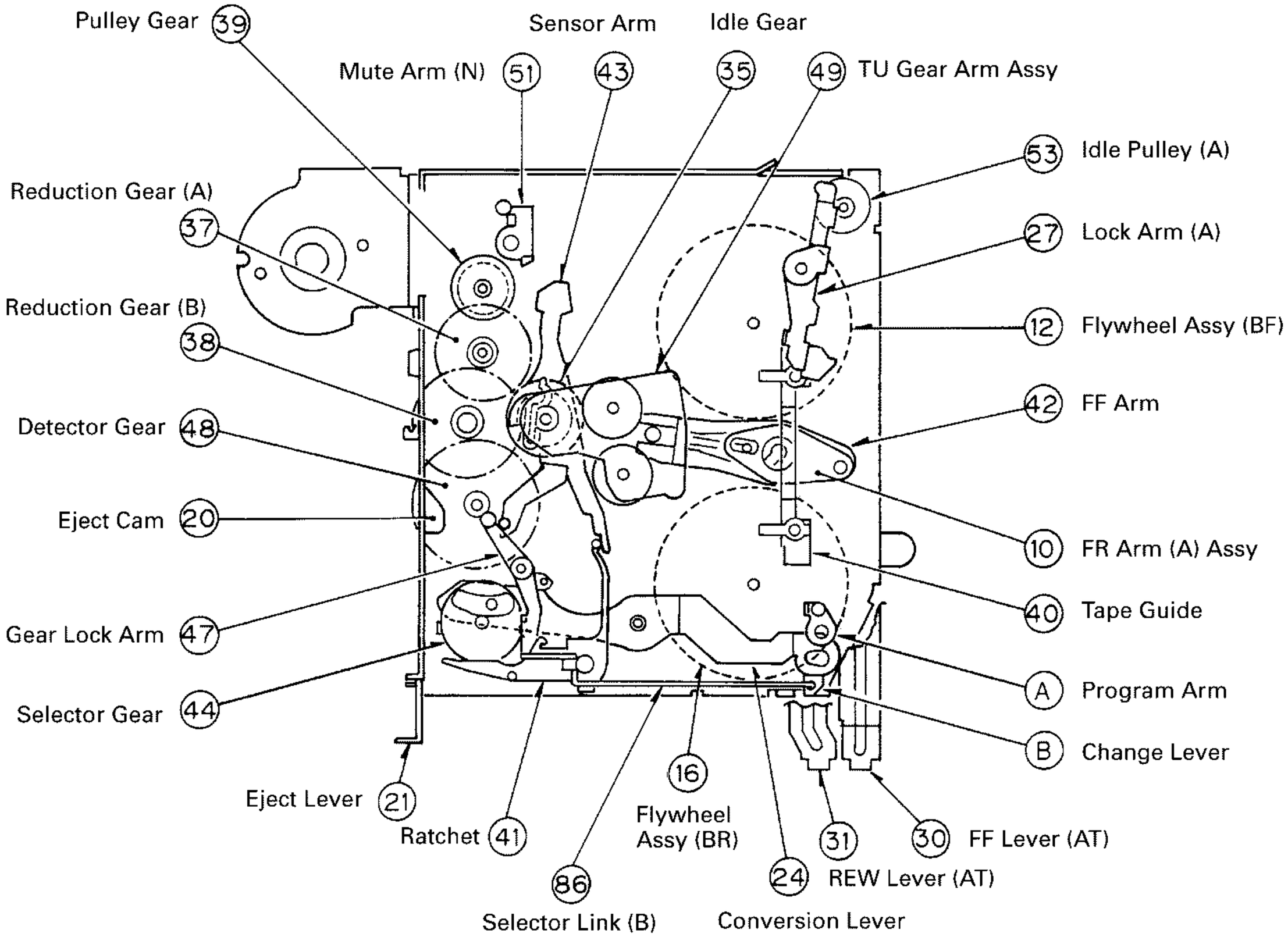


Fig. 1

3. OUTLINE OF ELECTRIC-PART LINKAGE

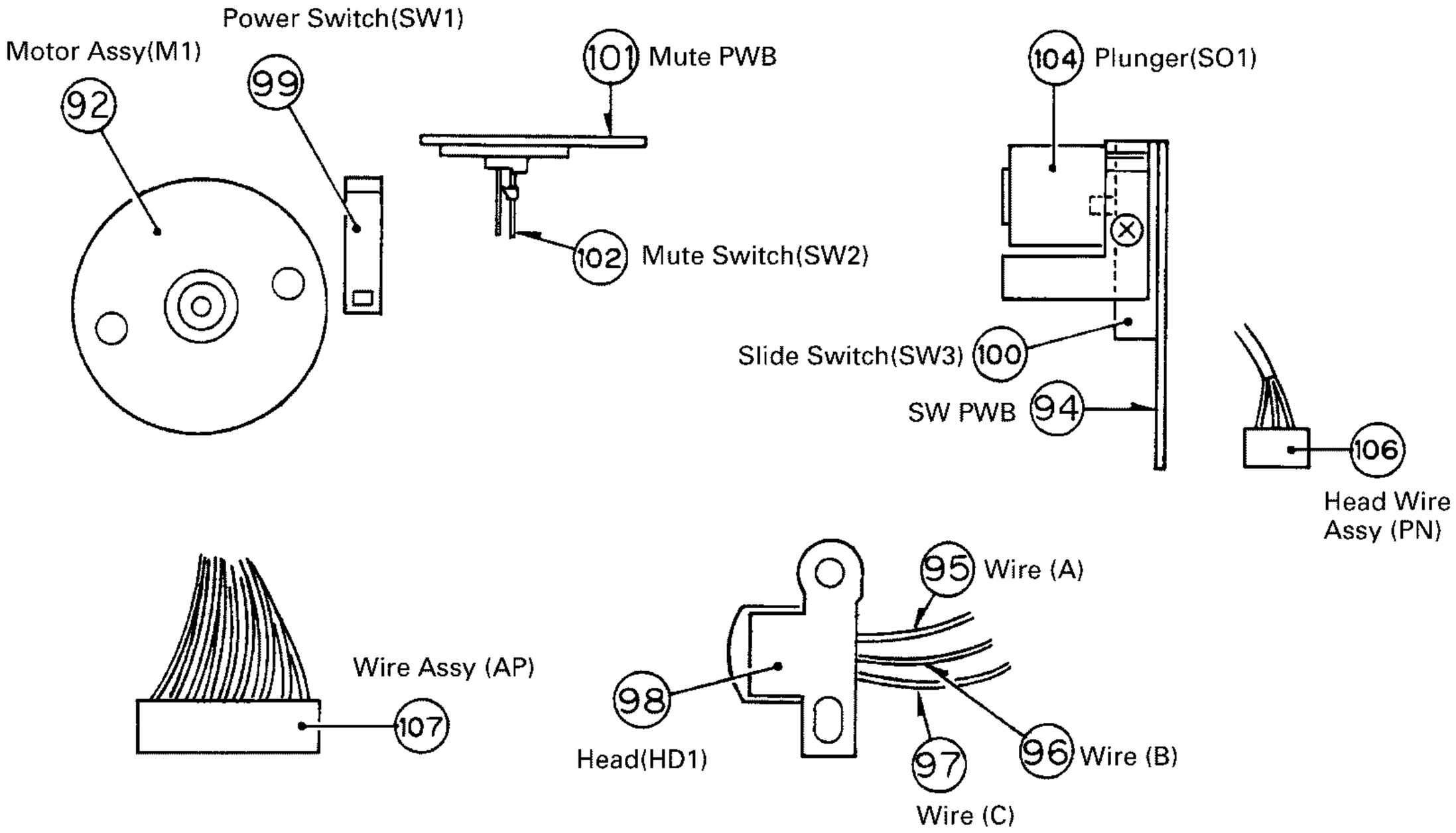


Fig. 2

4. MAIN OPERATIONS

4.1 OPERATION OF THE DETECTION MECHANISM

(1) The Detector Cam Assy ⑤⓪ generates rotational power in the direction B as shown by an arrow in the Fig.3 as the Reel Spindle Assy (D) ⑮ rotates.

(2) The Sensor Arm ④③ turns as shown by the arrows C in the Fig. 3, on the fulcrum A by the rotational force of the Detector Cam Assy ⑤⓪.

(3) The Detector Gear ④⑧ always rotates. The sensing pin of the Sensor Arm ④③ moves along the outer cam.

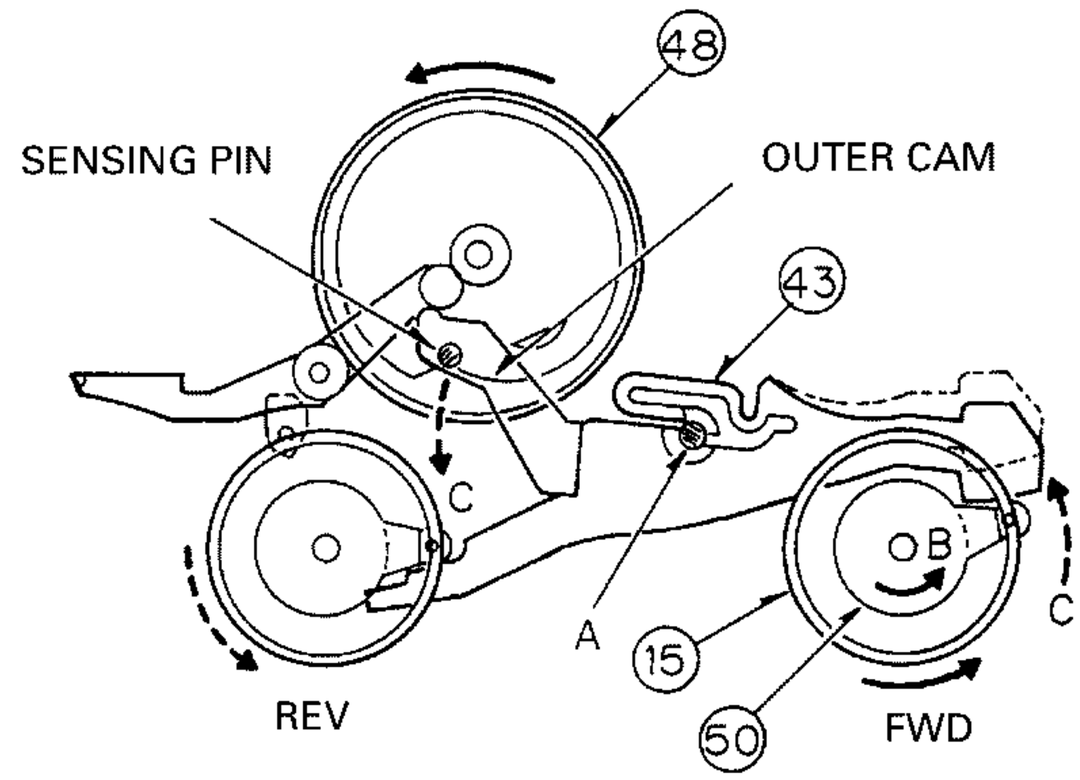


Fig. 3

(4) When the Reel Spindle Assy (D) ⑮ stops (or tape rewinding is completed), the Detector Cam Assy ⑤⓪ also stops.

(5) When the Detector Cam Assy ⑤⓪ stops, the Sensor Arm ④③ also stops turning in the direction C (Fig.3), and stands still.

(6) The sensing pin of the Sensor Arm ④③ is pushed toward the fulcrum of the Detector Gear ④⑧ by the inside cam of the Detector Gear ④⑧. (Fig.4)

(7) This movement unlocks the Gear Lock Arm ④⑦ from the Selector Gear ④④. The Selector Gear ④④ rushes toward the Detector Gear ④⑧ with the pressure of the Dash Spring ⑦⑦. When the Selector Gear ④④ gets engaged with the Detector Gear ④⑧, the Selector Gear ④④ starts rotating.

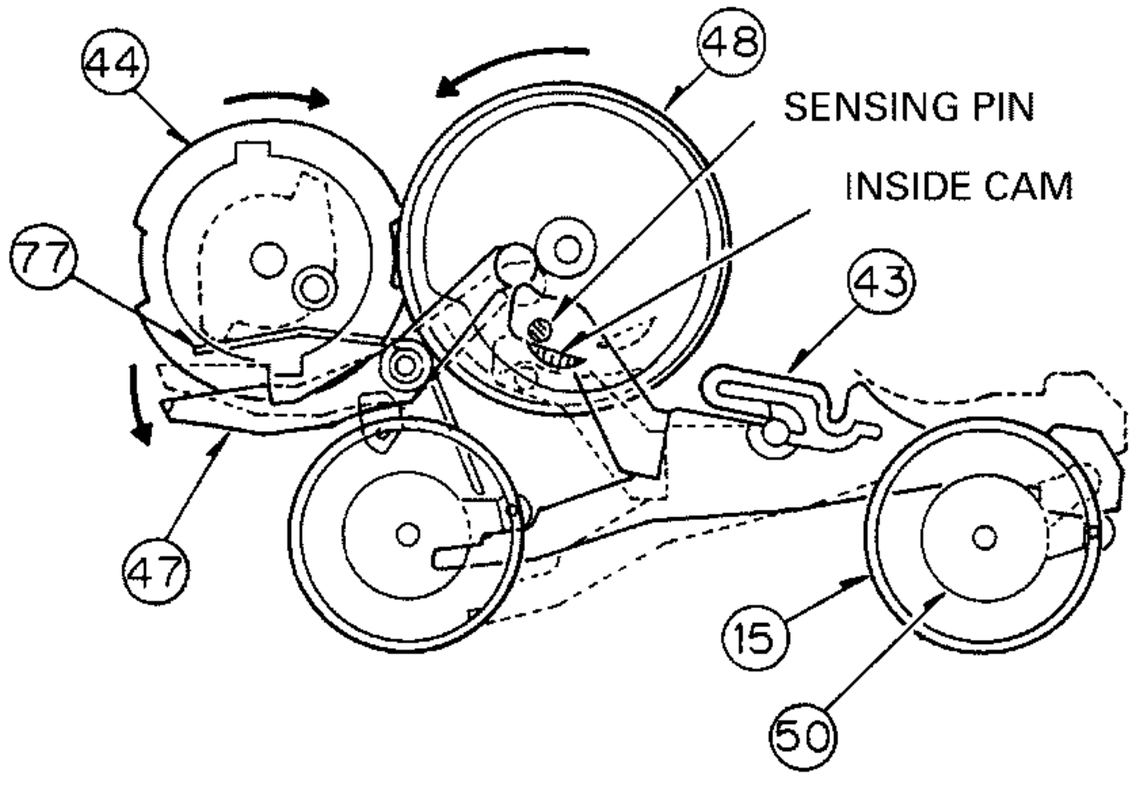
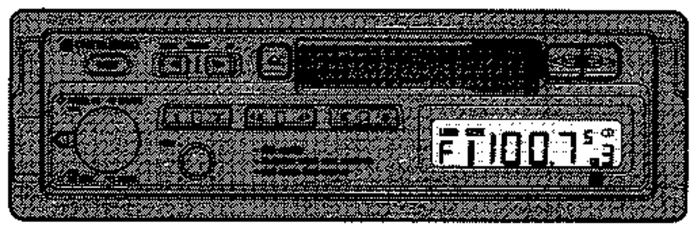


Fig. 4

Service Manual

PIONEER®
The Art of Entertainment

KEH-1010QR



ORDER NO.
CRT2122

CASSETTE CAR STEREO WITH FM/MW/LW ELECTRONIC TUNER

KEH-1010QR X1M/EE

CASSETTE CAR STEREO WITH FM/AM ELECTRONIC TUNER

KEH-1050QR X1M/ES

CASSETTE CAR STEREO WITH FM/AM/SW ELECTRONIC TUNER

KEH-1050QRS X1M/ES

NOTE:

● **See the separate manual CRT2145 for the cassette mechanism deschiption.**

CONTENTS

PIONEER ELECTORONIC CORPORATION 4-1Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTORONIC SERVICE INC. P.O.Box 1760,Long Beach, CA 90801-1760 U.S.A
PIONEER ELECTORONIC [EUROPE] N.V. Haven 1087 keetberglaan 1,9120 Melsele, Belgium
PIONEER ELECTORONIC ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00,Wheelock Place, Singapore 238880

K-TTS. DEC. 1997 Printed in Belgium

1. SAFETY INFORMATION

This service manual is intended for qualifief service technicians; it is not meant for the casual do-it-your selfer.
Qualified technicians have the necessary test equipment and tools,and have been trained to properly and safeiy repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely,you should mot risk trying to do so and refer the repair to a qualified service technician.

WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.
Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.
The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel or angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anveisning.
Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier.
Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

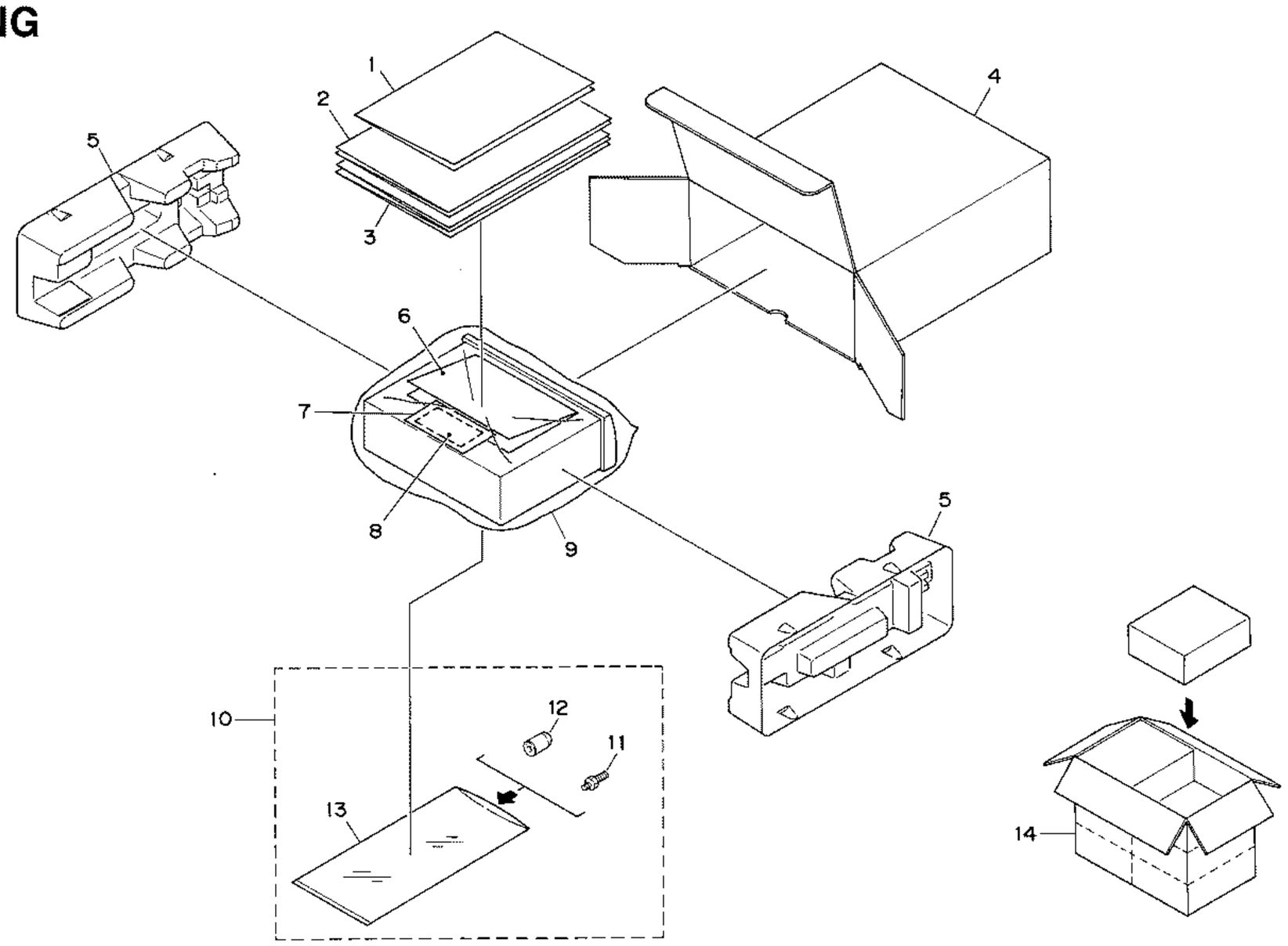


Fig.1

NOTE :

● Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.

● Screws adjacent to ▼ mark on the product are used for disassembly.

(1)PARTS LIST

Mark No.	Description	Part No.
1	Warranty Card	See Contrast table(2)
2	Owner's Manual	See Contrast table(2)
3	Installation Manual	See Contrast table(2)
4	Carton	See Contrast table(2)
5	Protector	CZH5523
6	Card	CRP1174
7	Card	CRP1176
8	Silica Gel	AEN7001
9	Polyethylene Bag	CZE2903
10	Accessory Assy	CZE2945
11	Screw	CBA1002
12	Bush	CNV1009
13	Polyethylene Bag	CZE2908
14	Contain Box	See Contrast table(2)

(2)CONTRAST TABLE

KEH-1010QR/X1M/EE,KEH-1050QR/X1M/ES and KEH-1050QRS/X1M/ES have the same construction except for the following:

Marl No.	Symbol and Description	Part No. KEH-1010QR/X1M/EE	Part No. KEH-1050QR/X1M/ES	Part No. KEH-1050QRS/X1M/ES
1	Warranty Card	CRY1087	Not used	Not used
2	Owner's Manual	CZR2926	CZR2928	CZR2930
3	Installation Manual	CZR2927	CZR2929	CZR2929
4	Carton	CZH5561	CZH5559	CZH5563
14	Contain Box	CZH5562	CZH5560	CZH5564

Owner's Manual or Installation Manual

Part No.	Language	Part No.	Language
CZR2926	English,Rosia	CZR2929	English,Spanish,Portugal,Arabic
CZR2927	English,Rosia	CZR2930	English,Spanish,Portugal,Arabic
CZR2928	English,Spanish,Portugal,Arabic		

2.2 EXTERIOR

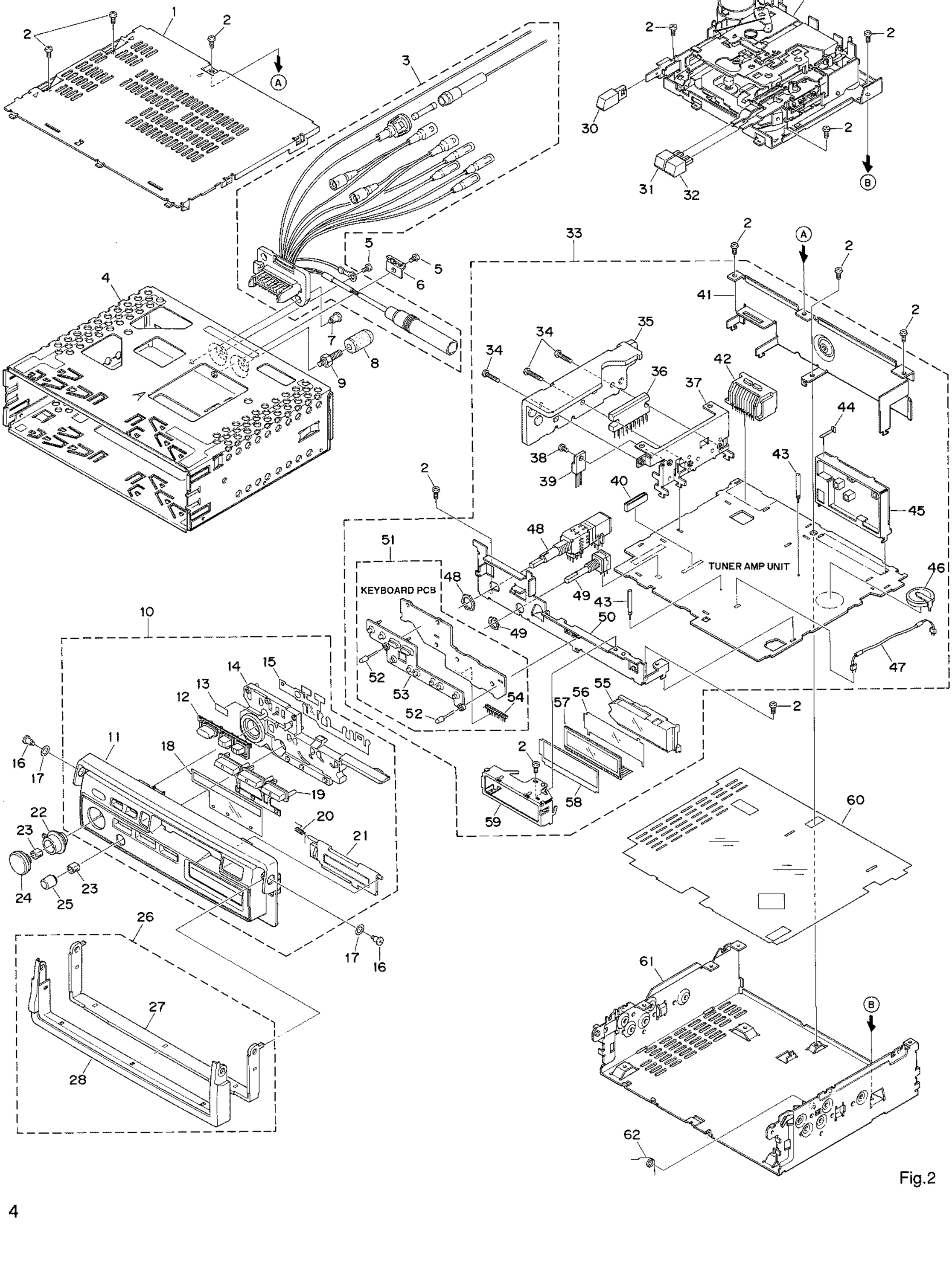


Fig.2

● EXTERIOR

(1)PARTS LIST

Mark	No.	Description	Part No.
	1	Cover	CZN6707
	2	Screw	BSZ26P060FMC
	3	Cord Assy	See Contrast table(2)
	4	Box	CZN6710
	5	Screw	BSZ30P050FMC
	6	Holder	CZN6625
	7	Screw	CBA1073
	8	Bush	CNV1009
	9	Screw	CBA1002
	10	Grille Assy	See Contrast table(2)
	11	Grille	See Contrast table(2)
	12	Button (BAND, DOWN/TUNING/UP)	CZA5517
	13	Sheet	CZN6729
	14	Lens	CZN6713
	15	Sheet	CZN6732
	16	Screw	CZB2921
	17	Washer	CZB2968
	18	Sheet	CZN6731
	19	Button (1-6)	CZA5518
	20	Spring	CZB2973
	21	Door	CZA5519
	22	Knob (FAD)	CZA2982
	23	Spring	CZA2949
	24	Knob (VOLUME)	CZA2981
	25	Knob (TONE)	CZA5520
	26	Handle Assy	CZX2995
	27	Handle	CZN6708
	28	Cover	CZN6715
	29	Cassette Mechanism Assy	CZX2994
	30	Button (EJECT)	CZA5516
	31	Button (REW)	CZA5515
	32	Button (FF)	CZA5514
	33	Tuner Amp Unit	See Contrast table(2)
	34	Screw	BMZ26P120FMC
	35	Heat Sink	CZN6702
	36	IC (IC400)	TA8215H
	37	IC Fixer	CZN6701
	38	Screw	BMZ30P060FMC
	39	Transistor (Q501)	2SD2394(DEF)
	40	Plug (11P)(CN201)	CZK2938
	41	Rear Chassis	CZN6723
	42	Plug (20P)(CN401)	CZK2930
	43	Clamper	CZK2923
	44	Plate	CZN6730
	45	Tuner Unit (TU100)	See Contrast table(2)
	46	Battery (B1)	CZE2949
	47	Connector (2P)(CN1-2)	CZD2975
	48	Volume (VR401)	CZC2638
	49	Volume (VR301)	CZC2637
	50	Bracket	CZN6699
	51	Keyboard PCB	See Contrast table(2)
	52	Lamp (PL601,PL602)	See Contrast table(2)
	53	Rubber Contact	CZN6717
	54	Connector (10P)(CN601)	CZK2932
	55	Lens	CZN6714
	56	Sheet	CZN6719
	57	LCD (LCD1)	CZA5526
	58	Sheet	CZN6728
	59	Bracket	CZN6704
	60	Insulator	CZN6709
	61	Chassis Assy	CZN6695
	62	Spring	CZB2972

(2)CONTRAST TABLE

KEH-1010QR/X1M/EE,KEH-1050QR/X1M/ES and KEH-1050QRS/X1M/ES have the same construction except for the following:

Mark	No.	Symbol and Description	Part No.		
			KEH-1010QR/X1M/EE	KEH-1050QR/X1M/ES	KEH-1050QRS/X1M/ES
	3	Cord Assy	CZD2970	CZD2970	CZD2972
	10	Grille Assy	CZX2998	CZX2997	CZX2999
	11	Grille	CZN6720	CZN6711	CZN6721
	33	Tuner Amp Unit	CZW5504	CZW5501	CZW5506
	45	Tuner Unit (TU100)	CZW2996	CZW2997	CZW2998
	51	Keyboard PCB	CZW5503	CZW3000	CZW3000
	52	Lamp (PL601,PL602)	CZE2948	CZE2947	CZE2947

2.3 CASSETTE MECHANISM MODULE

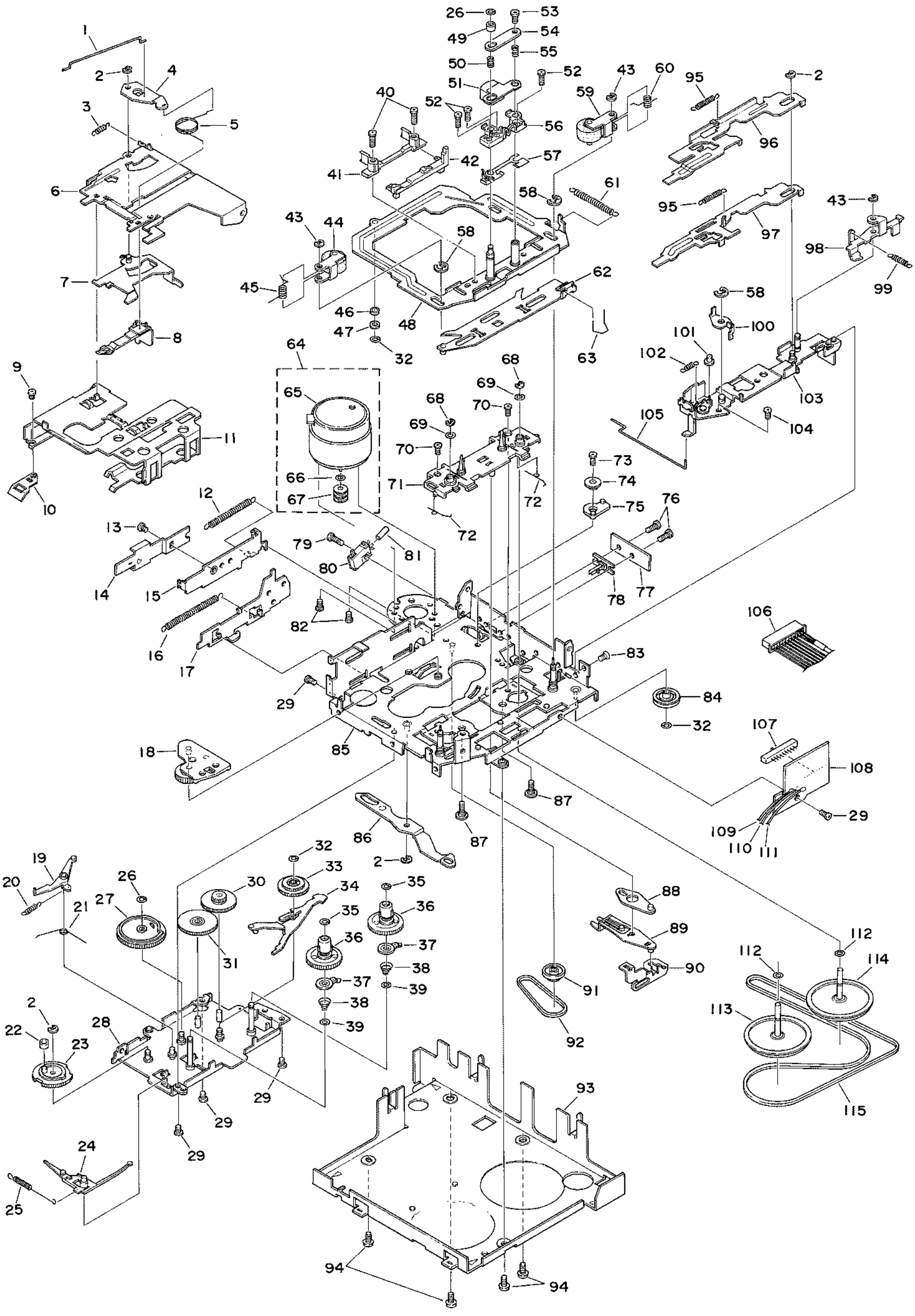


Fig.3

● CASSETTE MECHANISM MODULE

(1)PARTS LIST

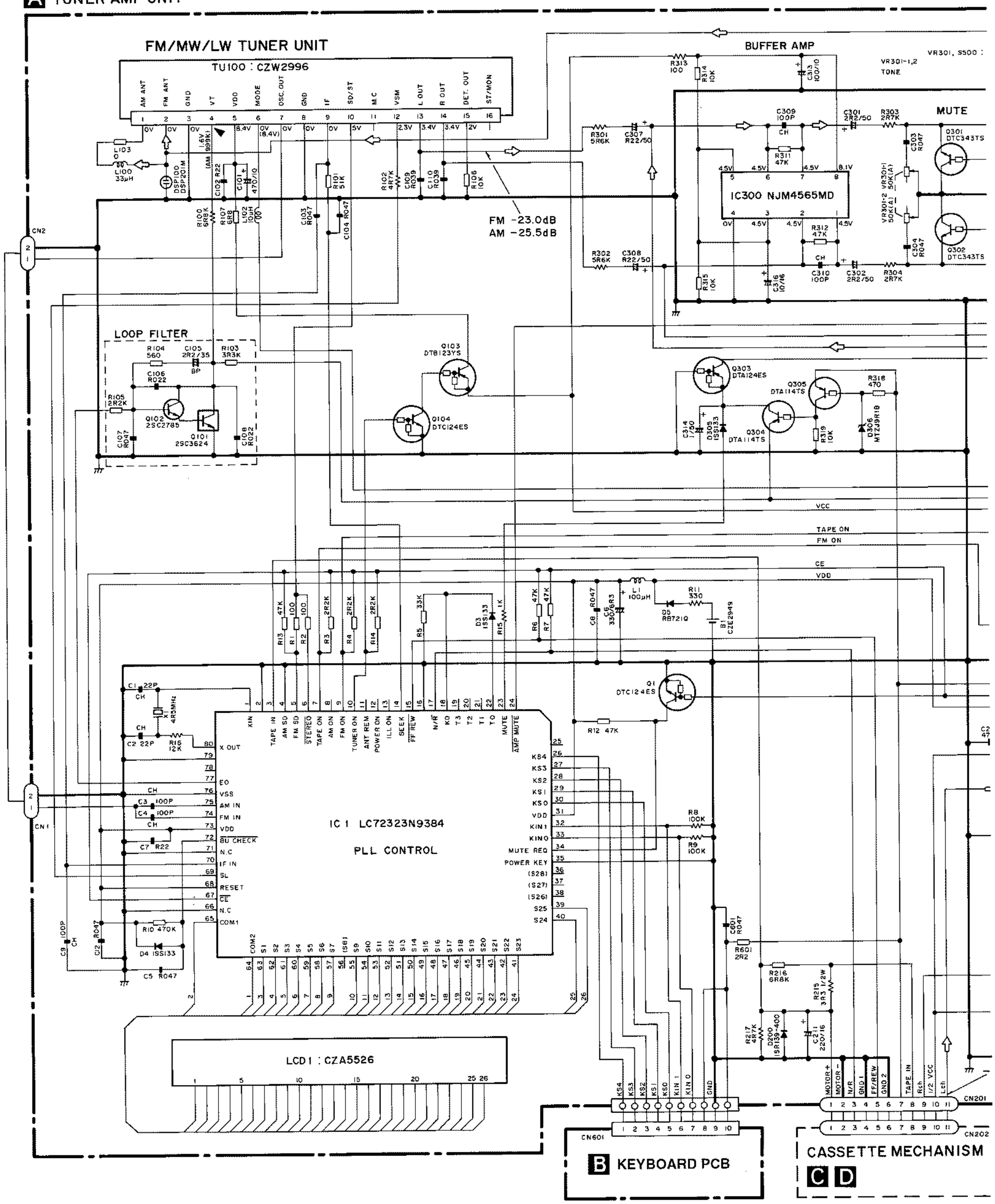
Mark	No.	Description	Part No.
	1	Link	1-0036-5006
	2	E-Ring	2-1712-0050-16
	3	Spring	1-0036-4007
	4	Plate	1-0036-1018
	5	Spring	1-0036-4023
	6	Hanger	1-0138-1002
	7	Lock Assy	X-0036-1019
	8	Hooker	1-0058-2004
	9	Screw	2-1032-4016-F2
	10	Guide	1-0036-1078
	11	Holder	1-0138-1010-3
	12	Spring	1-0036-4004
	13	Screw	JFZ26P025FZB
	14	Lever	CZN6706
	15	Lever	1-0036-1010
	16	Spring	1-0036-4005
	17	Cam Assy	X-0038-1041
	18	Arm Assy	X-0036-2015
	19	Arm	1-0038-2014
	20	Spring	1-0036-4003
	21	Spring	1-0036-4015
	22	Collar	1-0036-3018
	23	Gear	1-0036-2010
	24	Ratchet	1-0036-2007
	25	Spring	1-0038-4023
	26	Washer	1-0036-5024
	27	Gear	1-0036-2014
	28	Base Assy	X-0036-1009
	29	Screw	2-1382-0030-C2
	30	Gear	1-0036-2004-0
	31	Gear	1-0036-2003
	32	Washer	2-1812-0030-D2
	33	Gear	1-0036-2001
	34	Arm	1-0036-2009
	35	Washer	1-0036-5023
	36	Spindle Assy	X-0036-6080
	37	Cam Assy	X-0136-2001
	38	Spring	1-0138-4001
	39	Washer	1-0136-5001
	40	Screw	2-1032-0070-C2
	41	Guide	1-0038-2018
	42	Link	1-0138-2004
	43	E-Ring	2-1711-5040-16
	44	Arm (R) Assy	1-0036-6013
	45	Spring	1-0036-4013
	46	Roller	1-0036-3024
	47	Roller	1-0036-3002
	48	Plate Assy	X-0036-6082
	49	Roller	1-0036-3004
	50	Spring	1-0036-4011
	51	Head (HD1)	1-0036-7084-1
	52	Screw	1-0138-5002
	53	Screw	2-1012-0040-C2
	54	Plate	1-0036-1015
	55	Spring	1-0036-4010
	56	Arm	1-0138-2005-3
	57	Shim	1-0138-1006
	58	E-Ring	2-1712-5060-16
	59	Arm (F) Assy	1-0036-6014
	60	Spring	1-0036-4012
	61	Spring	1-0036-4006
	62	Arm Assy	X-0036-1010-3
	63	Spring	1-0036-4017
	64	Motor Assy(M1)	X-0036-6075
	65	Motor	1-0036-7057
	66	Washer	1-0012-5017
	67	Pulley	1-0036-3042
	68	E-Ring	2-1711-6032-96
	69	Washer	2-1821-0032-D1
	70	Screw	2-1331-7030-C2
	71	Bracket Assy	X-0138-2006-5
	72	Spring	1-0036-4018
	73	Screw	2-1362-0030-F2
	74	Collar	1-0038-3015
	75	Arm	1-0038-2034
	76	Screw	2-1331-7040-C2
	77	Mute PCB	1-0138-7002
	78	Mute Switch (S2)	1-0138-7087
	79	Screw	2-1331-7060-C2
	80	Power Switch(S1)	1-0036-7034
	81	Tube	1-0058-5016
	82	Screw	2-1032-0025-C2
	83	Screw	2-1012-0030-F2
	84	Pulley	1-0058-2021-5
	85	Chassis Assy	X-0036-1001
	86	Lever	1-0036-1016
	87	Screw	1-0036-5005
	88	Arm (A) Assy	X-0036-1025
	89	Arm	1-0036-2008
	90	Arm	1-0036-1026

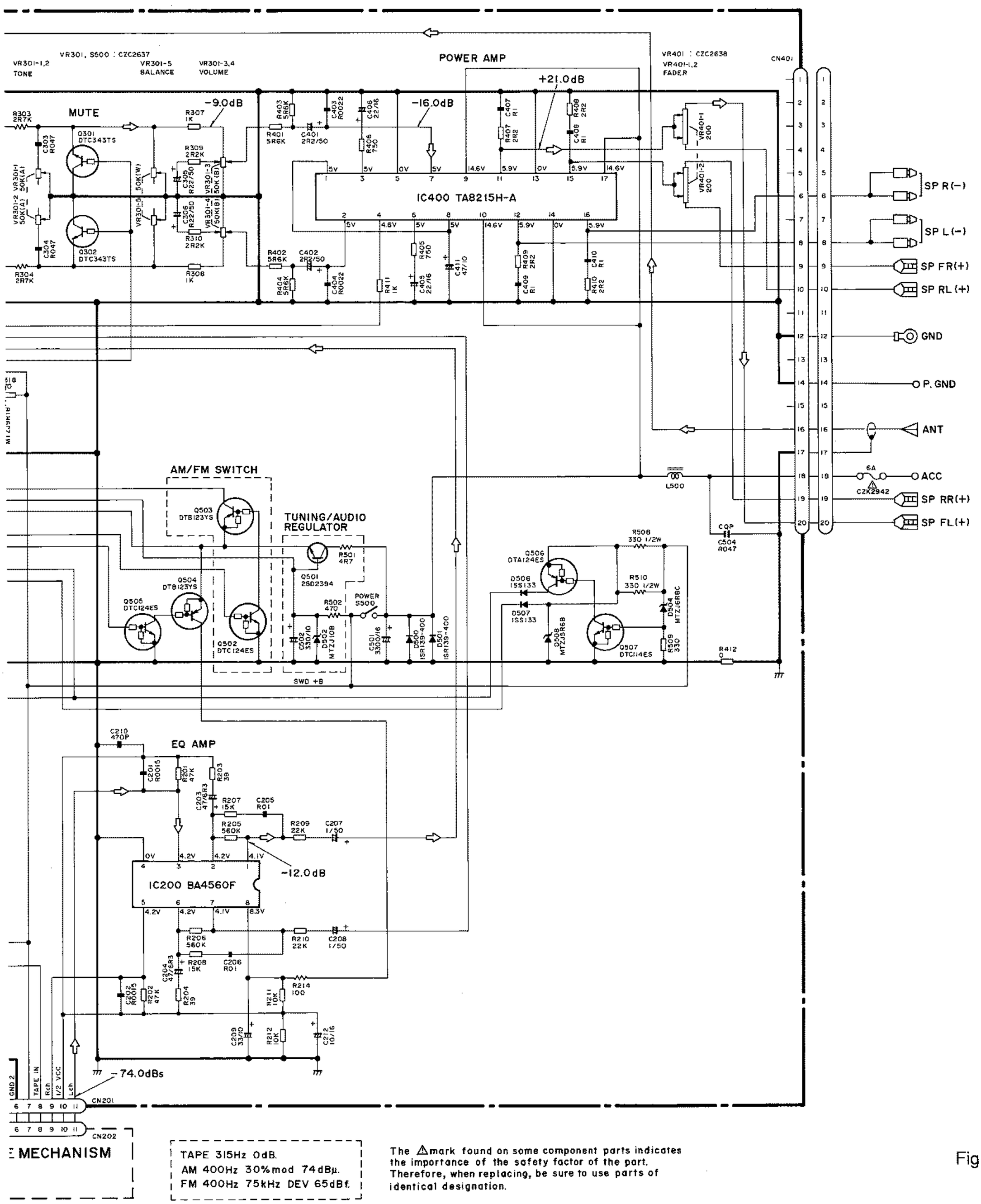
Mark	No.	Description	Part No.
	91	Gear	1-0036-2005-0
	92	Belt	1-0036-5018
	93	Bracket	CZN6705
	94	Screw	BMZ26P040FMC
	95	Spring	1-0036-4001
	96	Lever	1-0036-1004
	97	Lever	1-0036-1005
	98	Arm	1-0036-1013
	99	Spring	1-0036-4002
	100	Lever	1-0036-1023
	101	Roller	1-0038-3012
	102	Spring	1-0036-4008
	103	Bracket Assy	X-0036-6077
	104	Screw	2-1332-0040-C1
	105	Link	1-0138-5001
	106	Connector Assy (11P) (CN202)	CZD2974
	107	Slide Switch (S3)	1-0036-7007
	108	SW PCB	1-0036-7001
	109	Wire	1-0036-7004
	110	Wire	1-0036-7003
	111	Wire	1-0036-7002
	112	Washer	1-0036-5028
	113	Flywheel Assy	1-0036-6010-1
	114	Flywheel Assy	1-0036-6010-0
	115	Belt	1-0036-5004

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIARAM

● KEH-1010QR/X1M/EE





TAPE 315Hz 0dB.
AM 400Hz 30%mod 74dBμ.
FM 400Hz 75kHz DEV 65dBf.

The ⚠mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Fig.4

● KEH-1050QR/X1M/ES

A TUNER AMP UNIT

FM/AM TUNER UNIT

TU100 : CZW2997

AM ANT 1 · FM ANT 2 · GND 3 · VT 4 · VDD 5 · MODE 6 · OSC. OUT 7 · GND 8 · IF 9 · SD/ST 10 · M.C 11 · VSM 12 · L OUT 13 · R OUT 14 · DET. OUT 15 · ST/MON 16

0V · 0V · 0V · 16V 999K) (AM) · 8.4V · 0V (8.4V) · 0V · 0V · 0V · 5V · 2.3V · 3.4V · 3.4V · 2V

L103 0 · L100 33µH · DSP100 DSP201M · C102 R22 · C101 470/10 · C113 R047 · L101 10µH · L102 10µH · C114 R047 · C103 R047 · R101 51K · C104 R047 · R102 4R7K · C109 R039 · C110 R039 · R106 10K

FM −23.0dB
AM −25.5dB

CN2 2 1

LOOP FILTER

R104 560 · C105 2R2/35 BP · R103 3R3K · C106 R022 · R105 2R2K · Q102 2SC2785 · Q101 2SC3624 · C107 R047 · C108 R022

Q103 DTB123YS · Q104 DTC124ES

BUFFER AMP

R313 100 · R314 10K · C313 100/10 · VR301, S500 : VR301-1,2 TONE

R301 5R6K · C307 R22/50 · R302 5R6K · C308 R22/50

C309 100P CH · R311 47K · C301 2R2/50 · R303 2R7K · MUTE · Q301 DTC343TS · Q302 DTC343TS · C303 R047 · C304 R047 · VR301-1 VR301-2 50K(A)

IC300 NJM4565MD

4.5V · 4.5V · 4.5V · 8.1V · 0V · 4.5V · 4.5V · 4.5V

R312 47K · C310 100P CH · C302 2R2/50 · R304 2R7K · C316 10/16 · R315 10K

Q303 DTA124ES · Q305 DTA114TS · Q304 DTA114TS · R318 470 · C314 1/50 · D305 1SS133 · R319 10K · D306 MTZJ9R1B

VCC · FM ON · TAPE ON · CE · VDD

R11 330 · D5 RB721Q · B1 CZE2949 · L1 100µH · C6 330/6R3 · C8 R047 · R6 47K · R7 47K · R15 1K · R5 33K · R4 2R2K · R3 2R2K · R14 2R2K · R2 100 · R1 100 · R13 47K · C14 R047

Q1 DTC124ES · R12 47K

C1 22P CH · X1 4R5MHz · C2 22P CH · R16 12K

IC1 LC72323N9384

PLL CONTROL

XIN 2 · TAPE IN 3 · AM SD 4 · FM SD 5 · STEREO 6 · TAPE ON 7 · AM ON 8 · FM ON 9 · TUNER ON 10 · ANT REM 11 · POWER ON 12 · ILL ON 13 · SEEK 14 · FF REW 15 · N/R 16 · KO 17 · T3 18 · T2 19 · T1 20 · TQ 21 · MUTE 22 · AMP MUTE 23 · KS4 25 · KS3 26 · KS2 27 · KS1 28 · KS0 29 · VDD 30 · KIN1 31 · KIN0 32 · MUTE REQ 33 · POWER KEY 34 · (S28) 35 · (S27) 36 · (S26) 37 · S25 38 · S24 39

X OUT 80 · 79 · 78 · EO 77 · VSS 76 · AM IN 75 · FM IN 74 · VDD 73 · BU CHECK 72 · NC 71 · IF IN 70 · SL 69 · RESET 68 · CE 67 · N.C 66 · COM1 65

C3 100P CH · C4 100P CH · C7 R22 · R10 470K · D4 1SS133 · C12 R047 · C5 R047

COM2 64 · S1 63 · S2 62 · S3 61 · S4 60 · S5 59 · S6 58 · S7 57 · (S8) 56 · S9 55 · S10 54 · S11 53 · S12 52 · S13 51 · S14 50 · S15 49 · S16 48 · S17 42 · S18 46 · S19 45 · S20 44 · S21 43 · S22 42 · S23 41

LCD1 : CZA5526

R8 100K · R9 100K

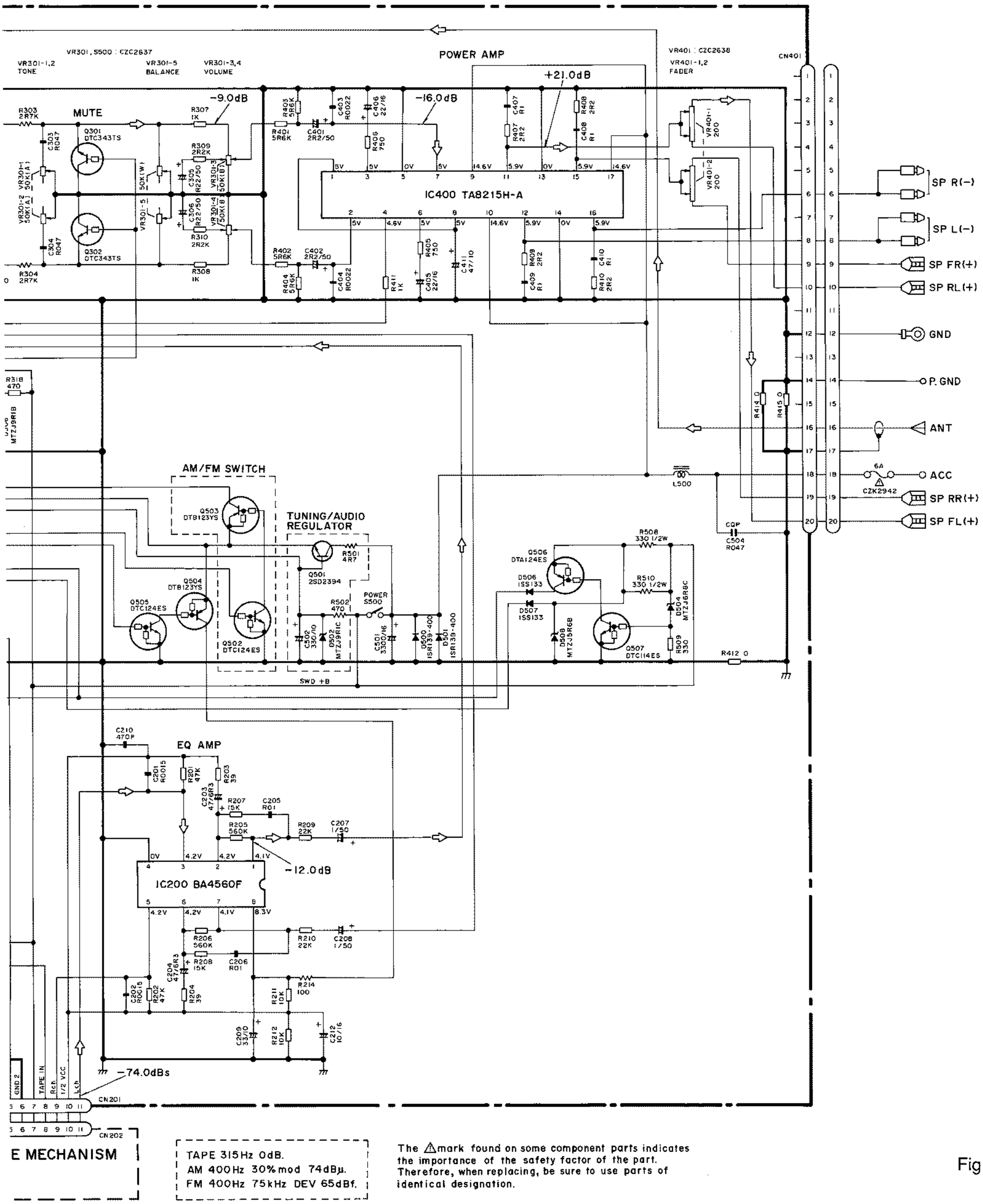
C601 R047 · R601 2R2 · R216 6R8K · R215 3R3 1/2W · R217 4R7K · D200 1SR139-400 · C211 220/16

MOTOR + · MOTOR − · N/R · GND L · FF/REW · GND 2 · TAPE IN · Rch · 1/2 VCC · Lch

CN601 1 2 3 4 5 6 7 8 9 10 · CN201 1 2 3 4 5 6 7 8 9 10 11 · CN202 1 2 3 4 5 6 7 8 9 10 11

B KEYBOARD PCB

CASSETTE MECHANISM **C** **D**

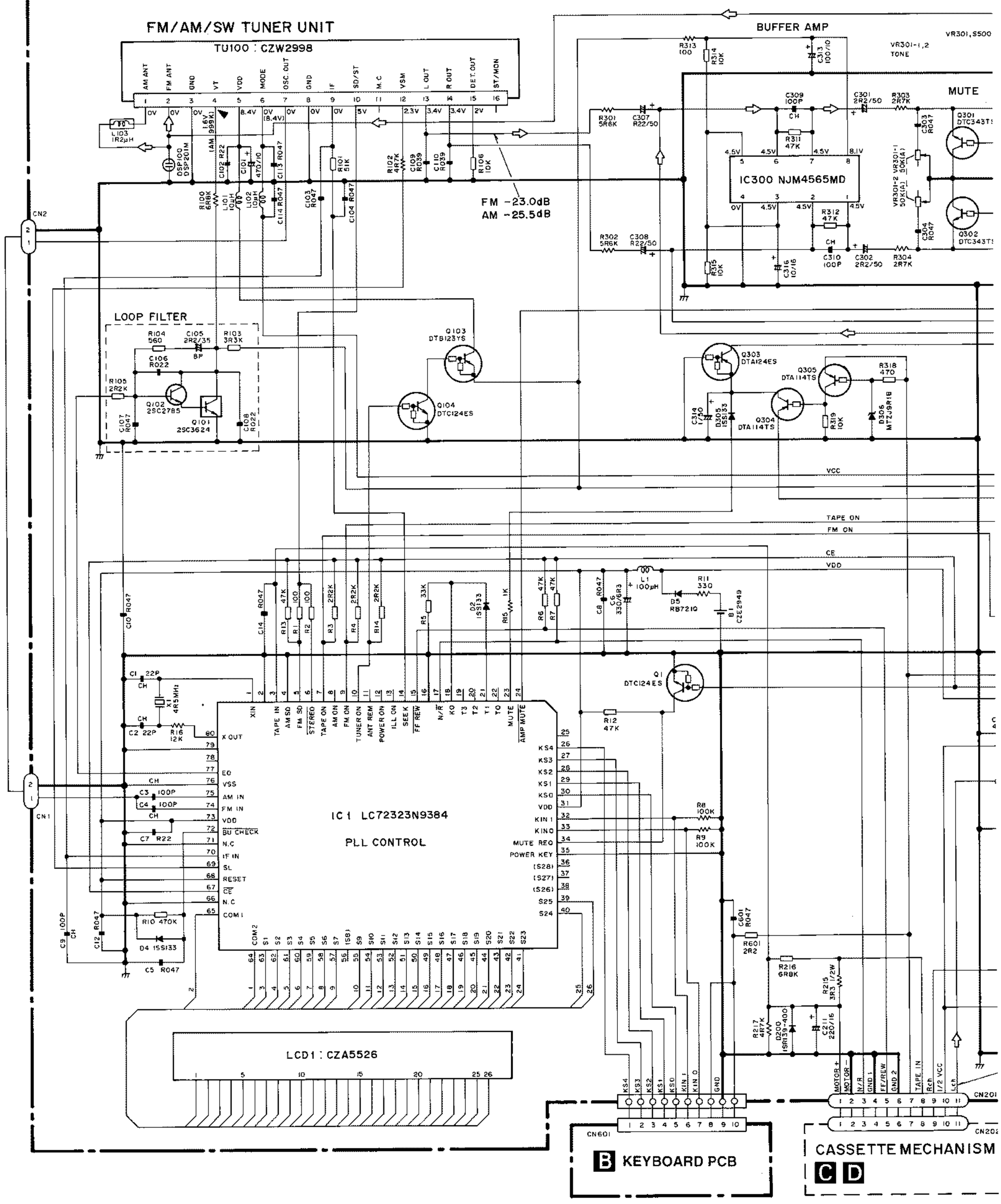


The ⚠mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Fig.5

● KEH-1050QRS/X1M/ES

A TUNER AMP UNIT



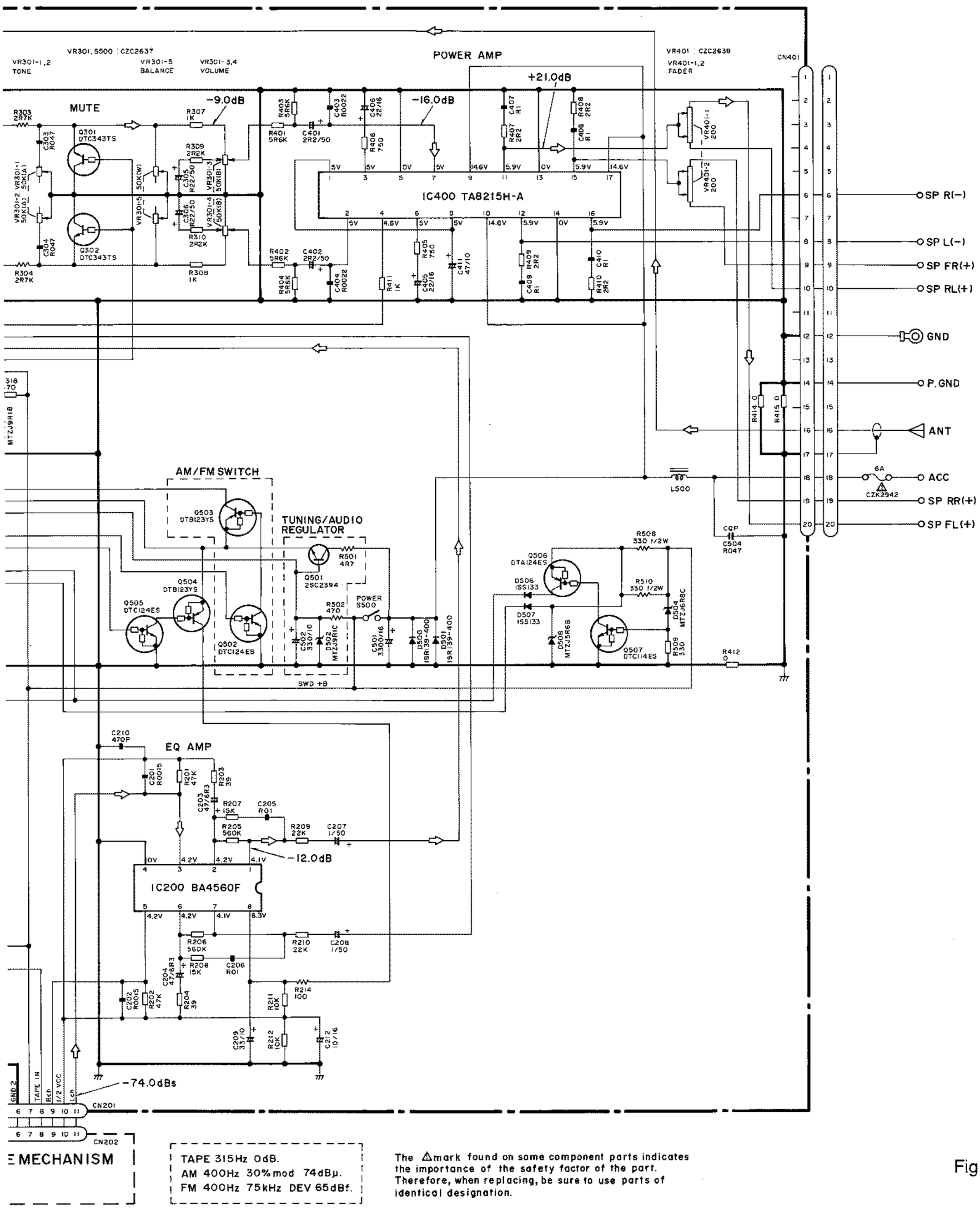
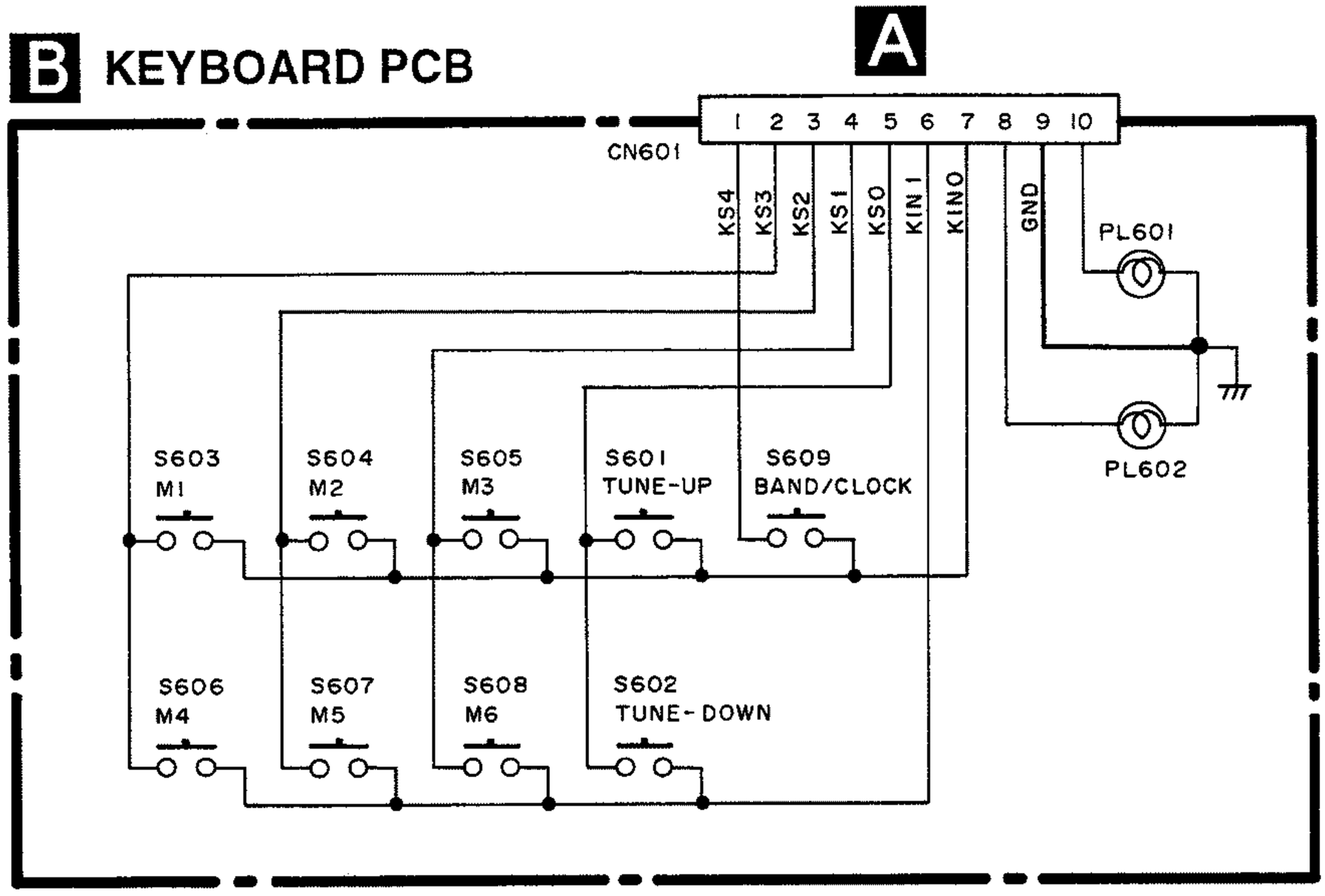

VR301, S500 : CZC2637
VR301-1,2 TONE
VR301-5 BALANCE
VR301-3,4 VOLUME
POWER AMP
VR401 : CZC263B
VR401-1,2 FADER
CN401
MUTE
-9.0dB
-16.0dB
+21.0dB
Q301 DTC343TS
Q302 DTC343TS
IC400 TA8215H-A
SP R(−)
SP L(−)
SP FR(+)
SP RL(+)
GND
P.GND
ANT
ACC
SP RR(+)
SP FL(+)
AM/FM SWITCH
TUNING/AUDIO REGULATOR
Q503 DTB123YS
Q504 DTB123YS
Q505 DTC124ES
Q502 DTC124ES
Q501 2SC2394
POWER S500
SWD +B
Q506 DTA124ES
Q507 DTC114ES
EQ AMP
IC200 BA4560F
-12.0dB
-74.0dBs
CN201
CN202
GND 2
TAPE IN
Rch
1/2 VCC
Lch
E MECHANISM
TAPE 315Hz 0dB.
AM 400Hz 30% mod 74dBμ.
FM 400Hz 75kHz DEV 65dBf.
The ⚠mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Fig.6

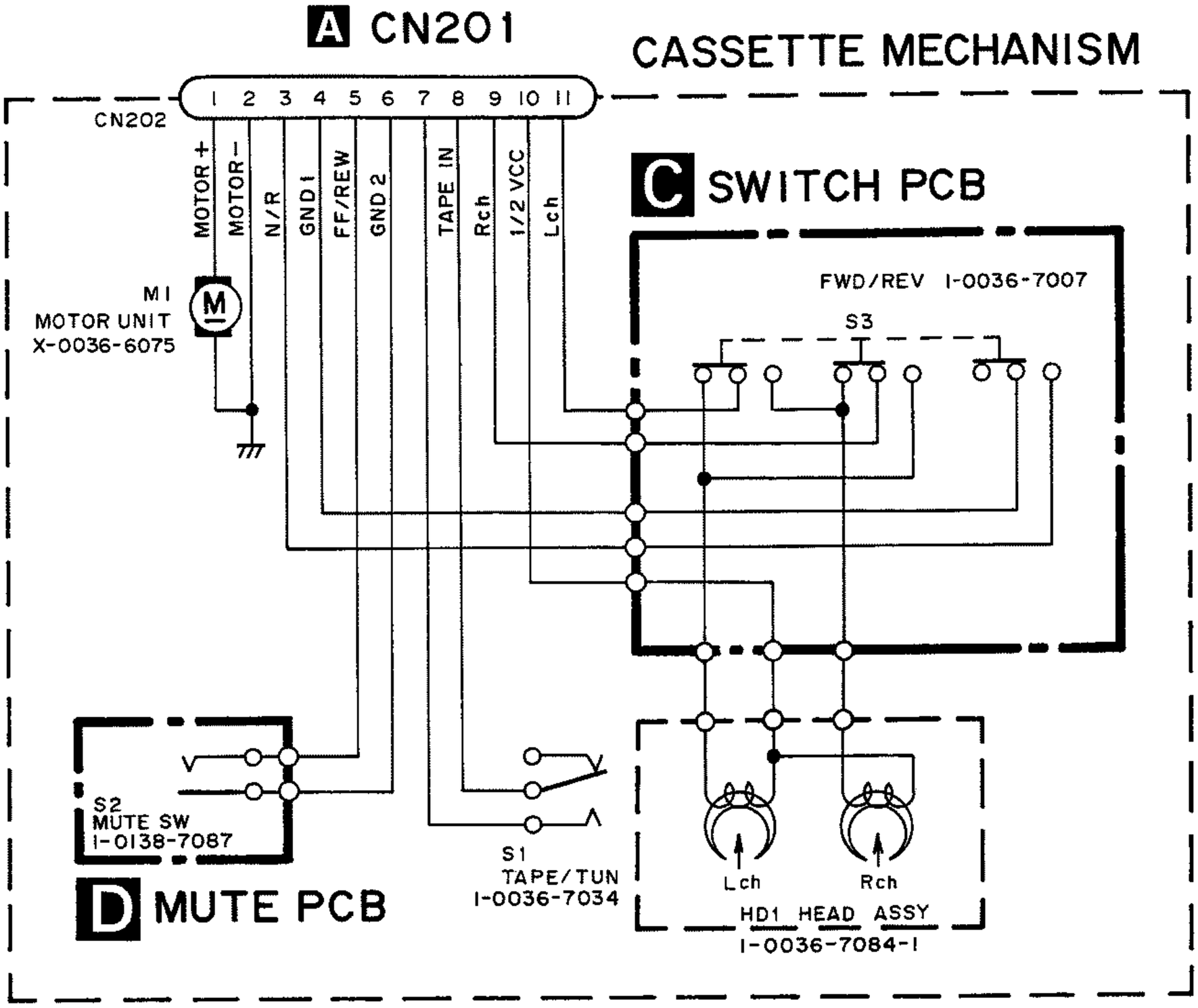
3.2 KEYBOARD PCB



	PL601,602
KEH-1010QR	CZE2948
KEH-1050QR	CZE2947
KEH-1050QRS	CZE2947

Fig.7

3.3 CASSETTE MECHANISM MODULE



SWITCHES:
- S1 : TAPE/TUN SWITCH.....TAPE/TUN
- S2 : MUTE SWITCH .....ON-OFF
- S3 : FWD/REV SWITCH.....FWD-REV

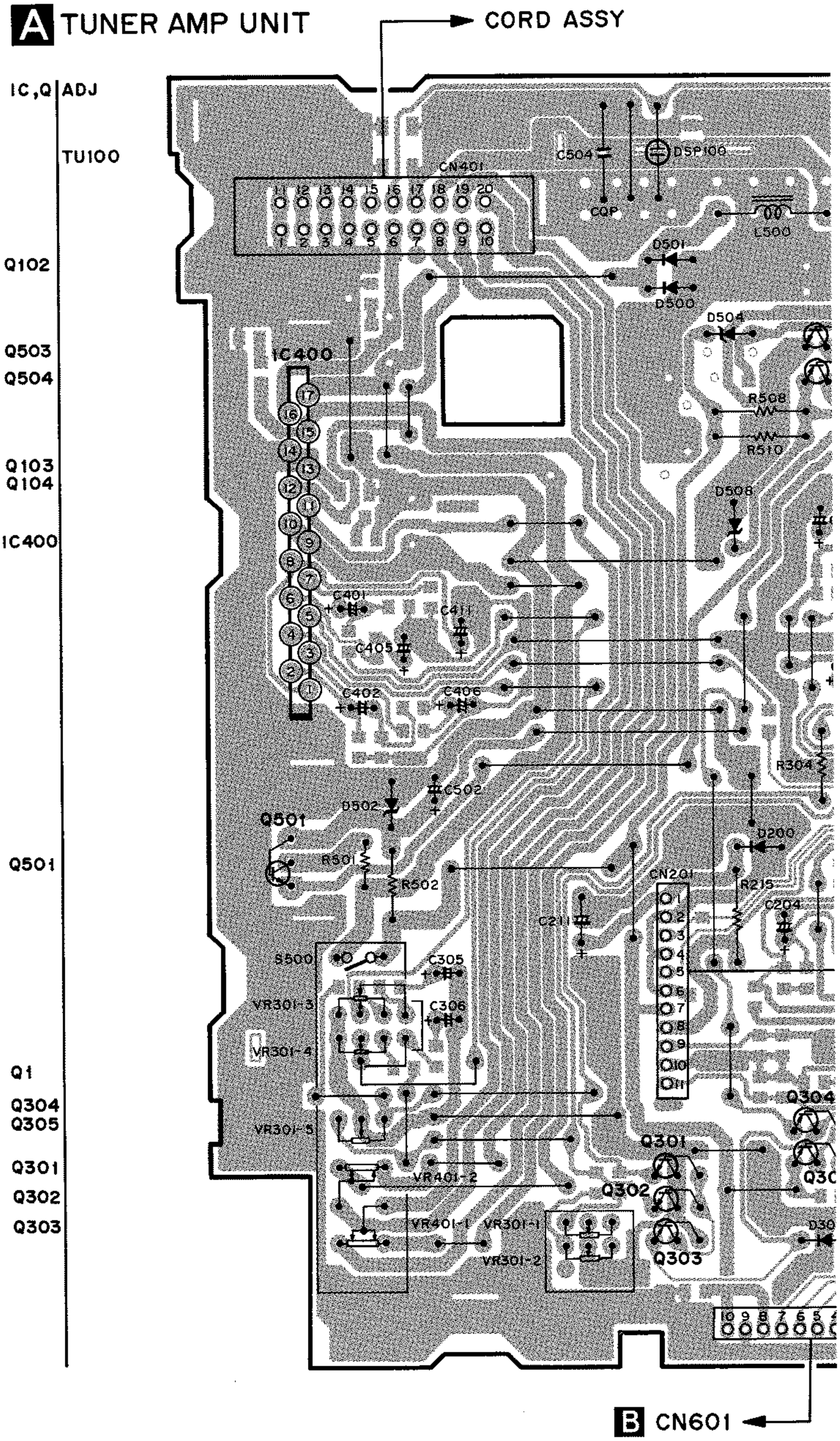
Fig.8

The underlined indicates the switch position.

4. PCB CONNECTION DIAGRAM

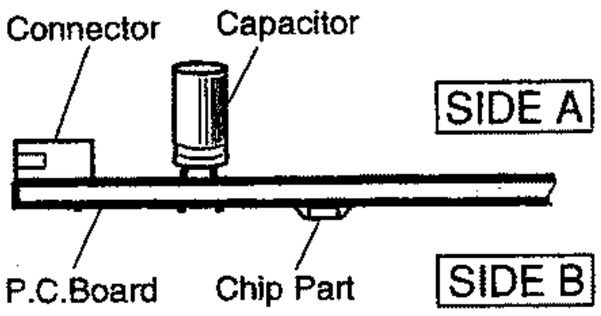
4.1 TUNER AMP UNIT

● KEH-1010QR/X1M/EE



NOTE FOR PCB DIAGRAMS

1.Viewpoint of PCB diagrams



SIDE A

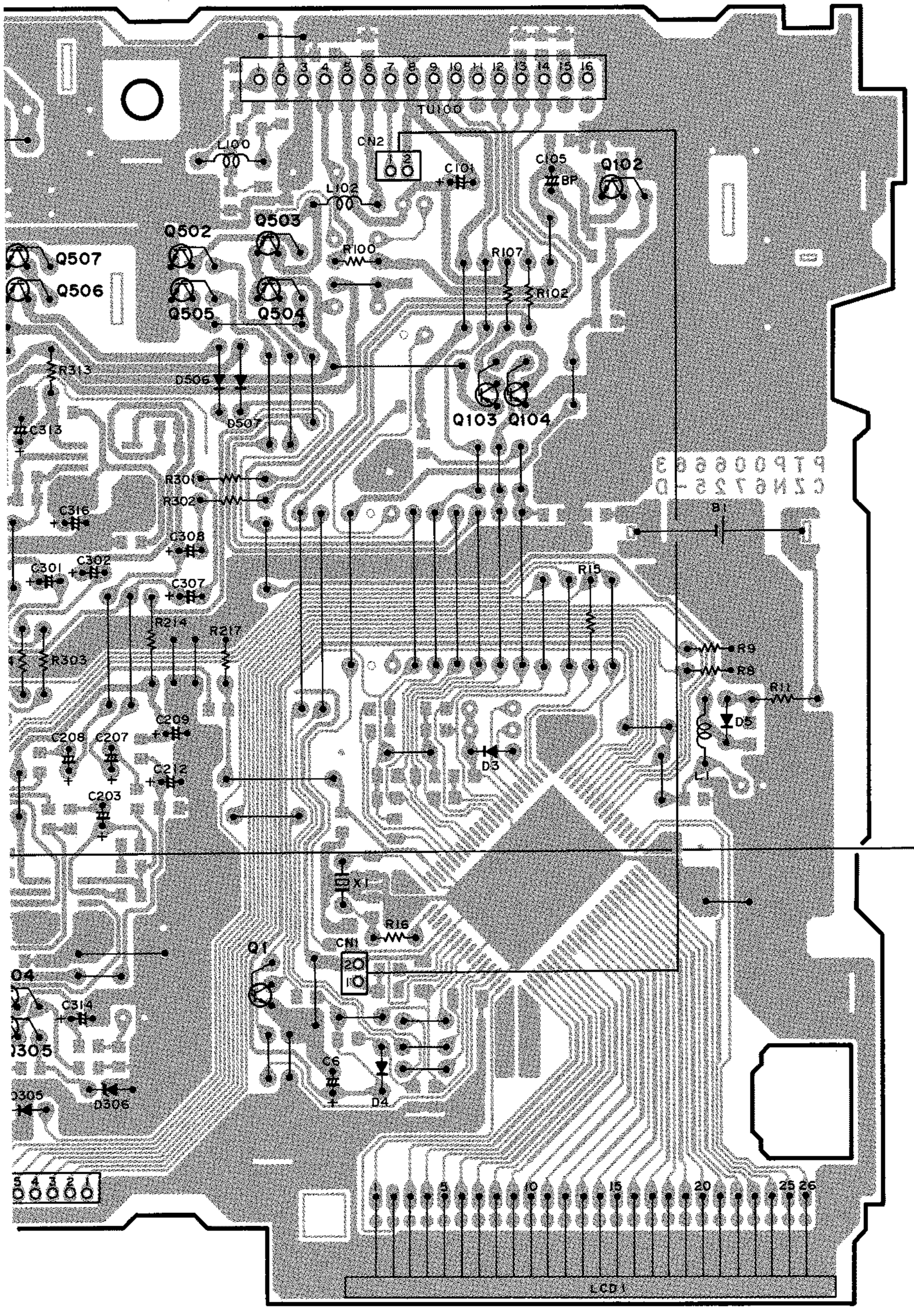
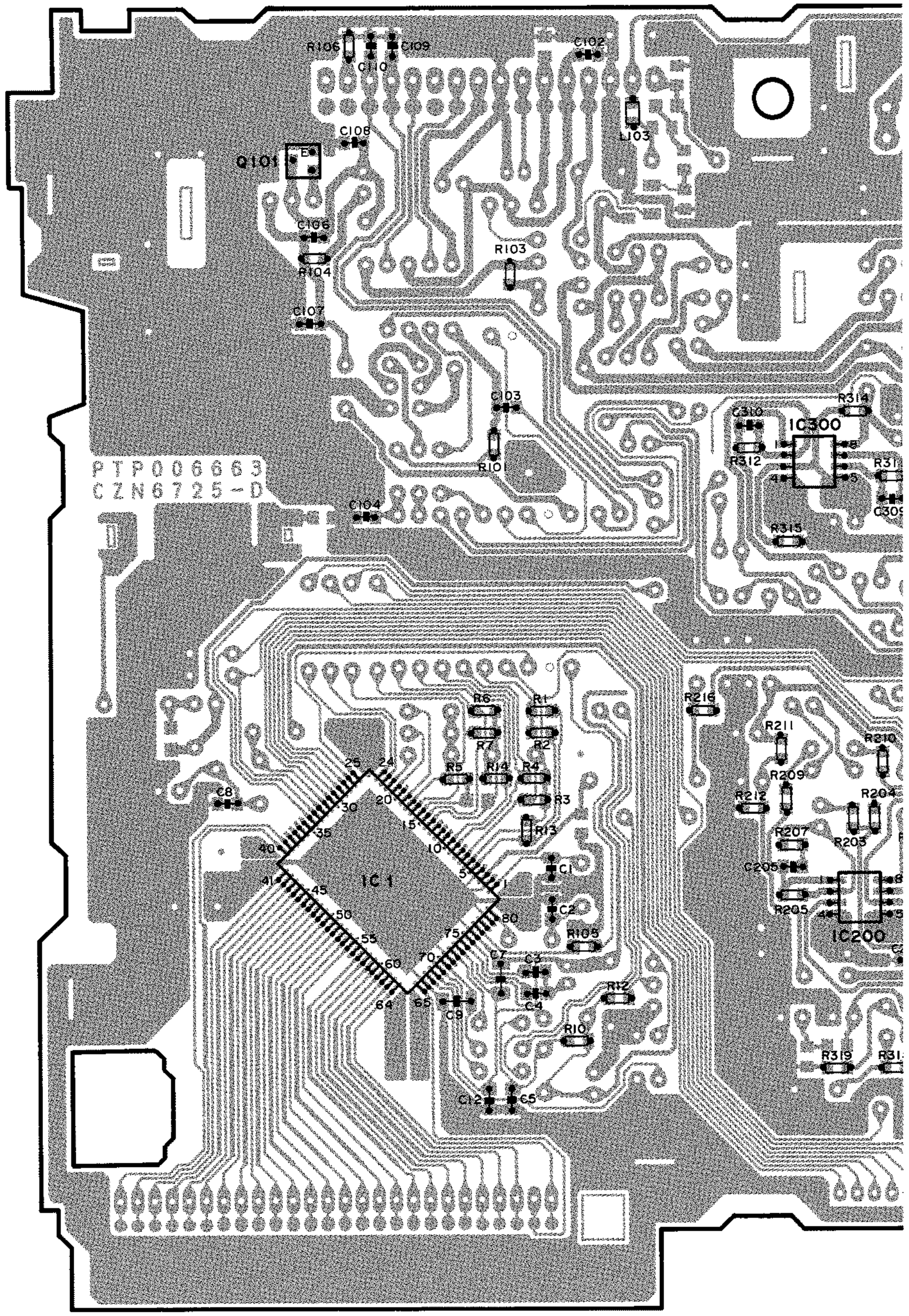

TU100
CN2
L100
L102
C101
C105
BP
Q102
Q502
Q503
Q507
Q506
Q505
Q504
R100
R107
R102
R313
D506
D507
Q103
Q104
C313
R301
R302
C316
C308
C301
C302
C307
R214
R217
R303
R15
R9
R8
R11
D5
L1
C209
C208
C207
C212
C203
D3
B1
X1
R16
CN1
Q1
C314
C6
D4
D305
D306
CN202
LCD1

Fig.9

A TUNER AMP UNIT



SIDE B

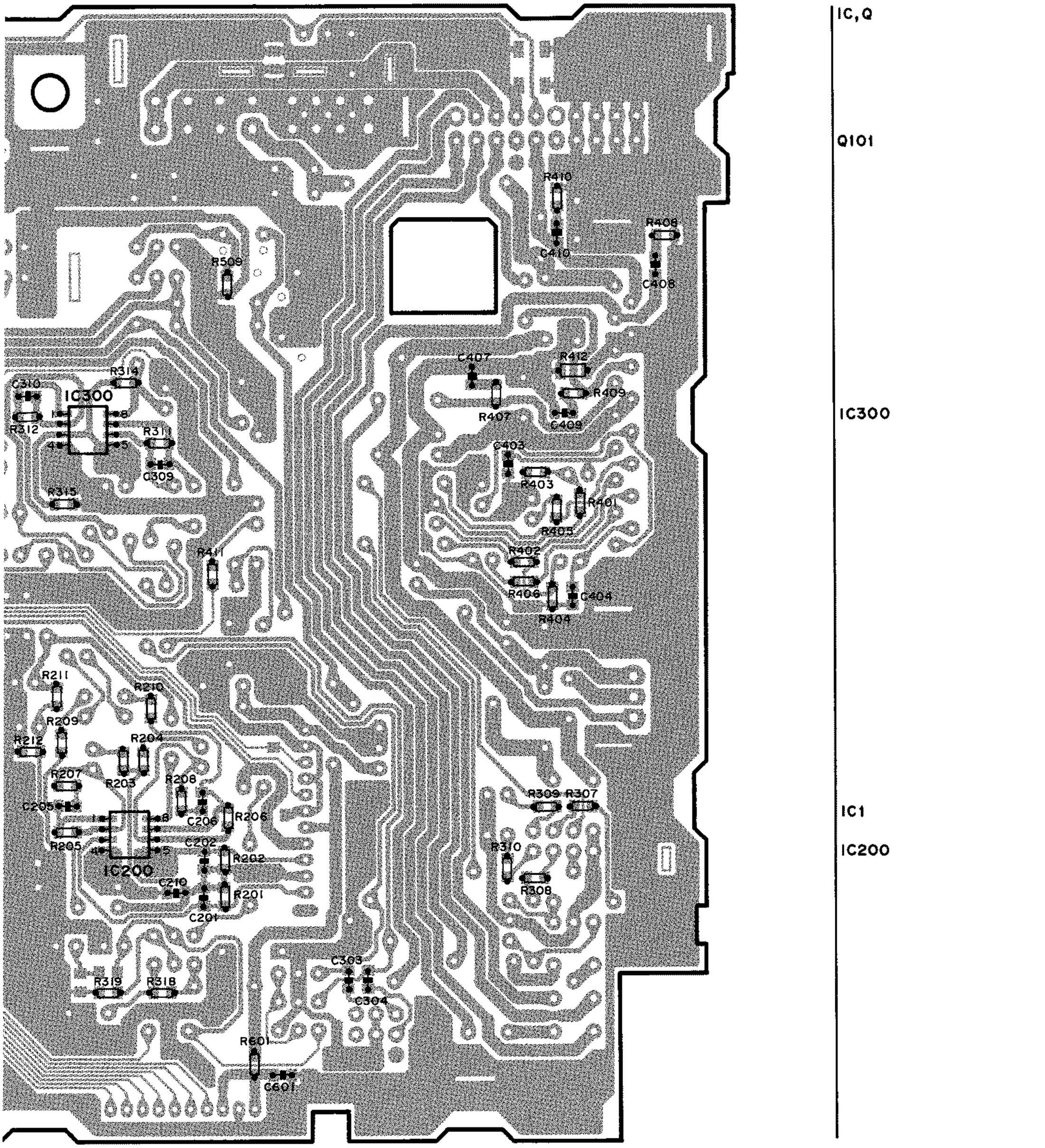
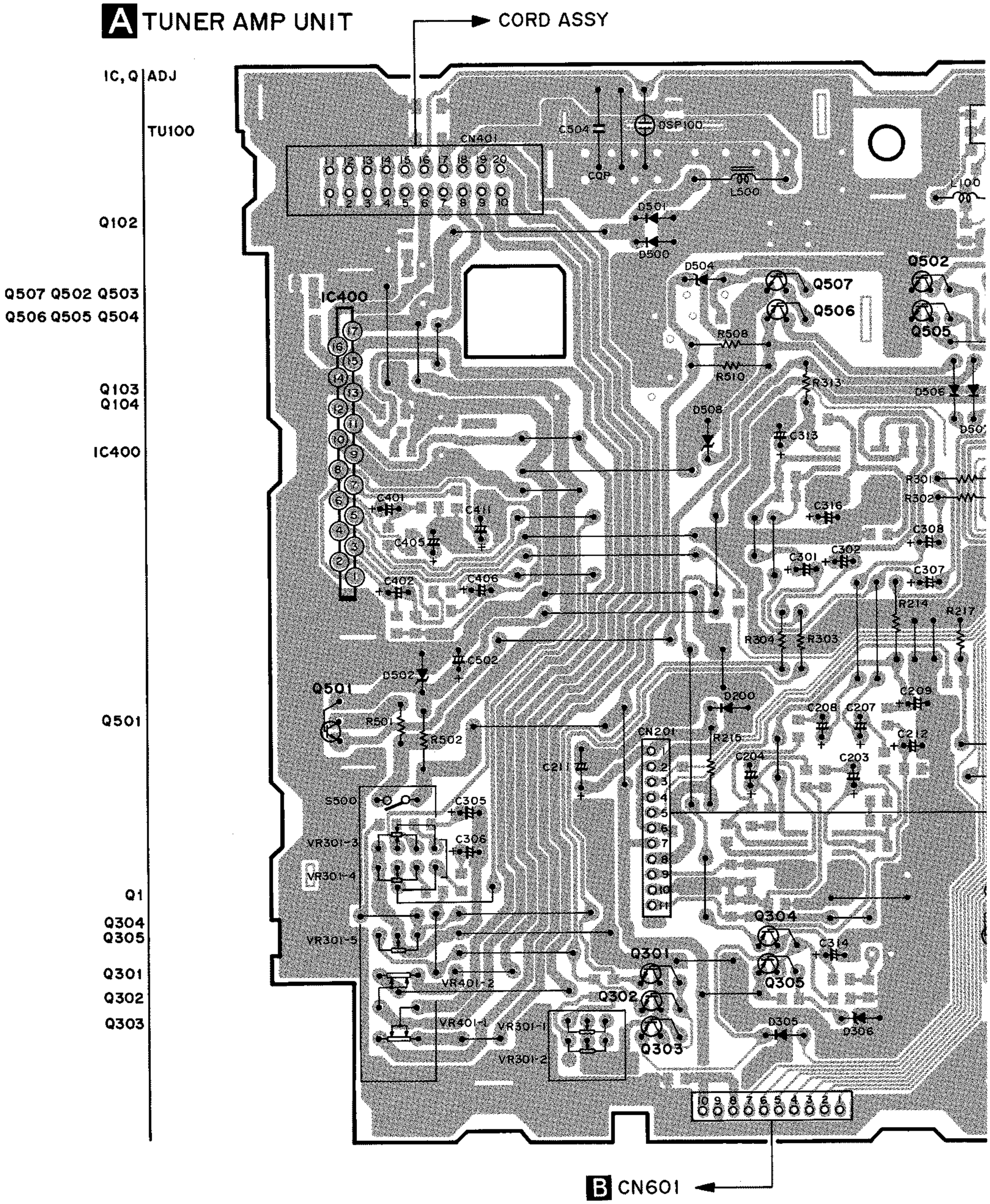

IC,Q
Q101
IC300
IC1
IC200
R410
C410
R408
C408
R509
C407
R412
R409
C409
R407
C403
R403
R401
R405
R411
R402
R406
C404
R404
R211
R210
R209
R212
R204
R207
R203
R208
C205
C206
R206
R205
C202
R202
C210
R201
C201
R309
R307
R310
R308
C303
C304
R319
R318
RG01
CG01
R314
C310
IC300
R312
R311
C309
R315

Fig.10

● KEH-1050QR/X1M/ES



SIDE A

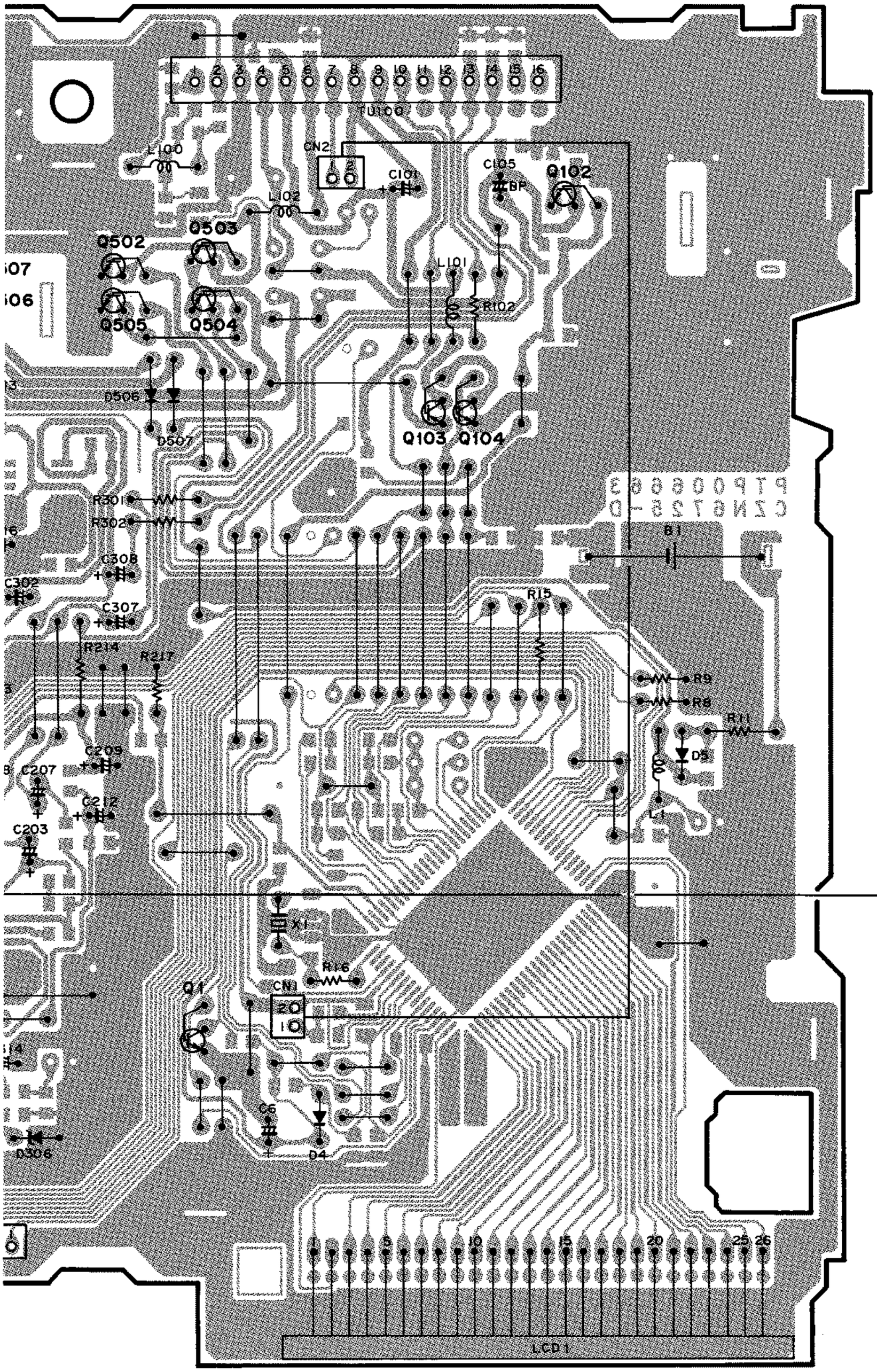
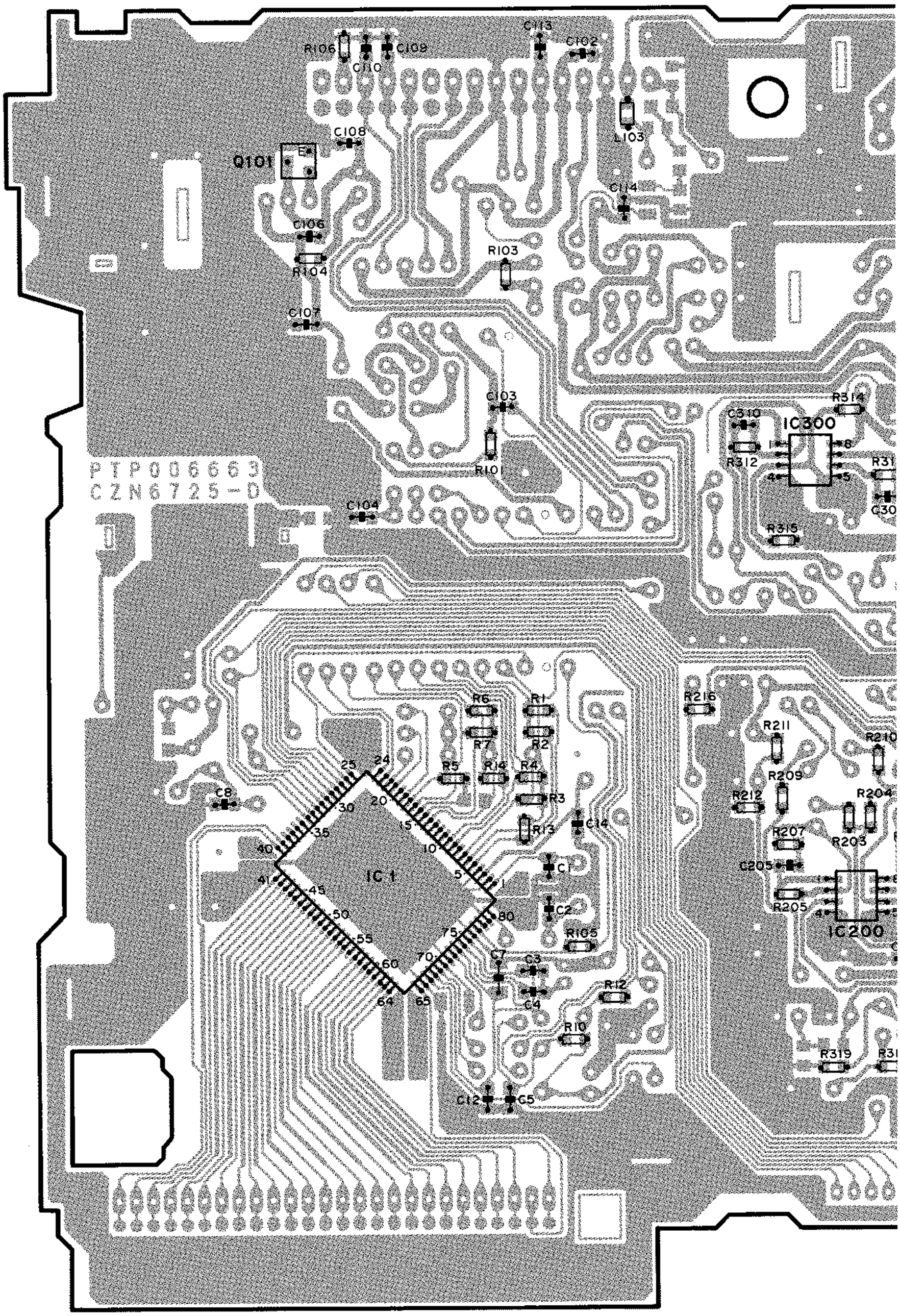
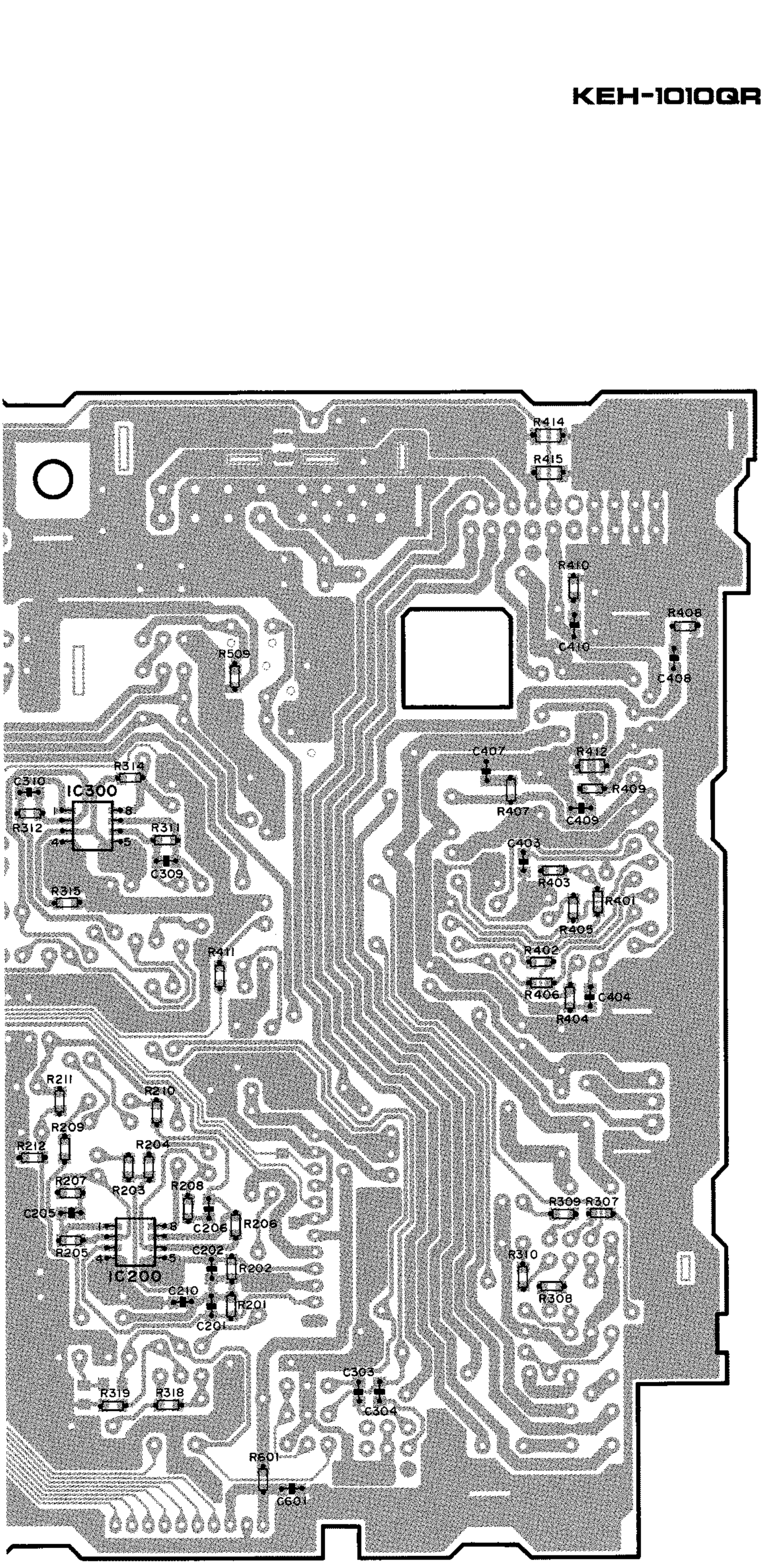

TU100
L100
CN2
C105
Q102
C101
L102
Q503
Q502
L101
R102
Q505
Q504
D506
D507
Q103
Q104
R301
R302
B1
C308
C302
C307
R15
R214
R217
R9
R8
R11
C209
C207
D5
C212
C203
L1
CN202
X1
R16
CN1
Q1
C6
D4
D306
LCD1

Fig.11

A TUNER AMP UNIT



SIDE B



IC, Q

Q101

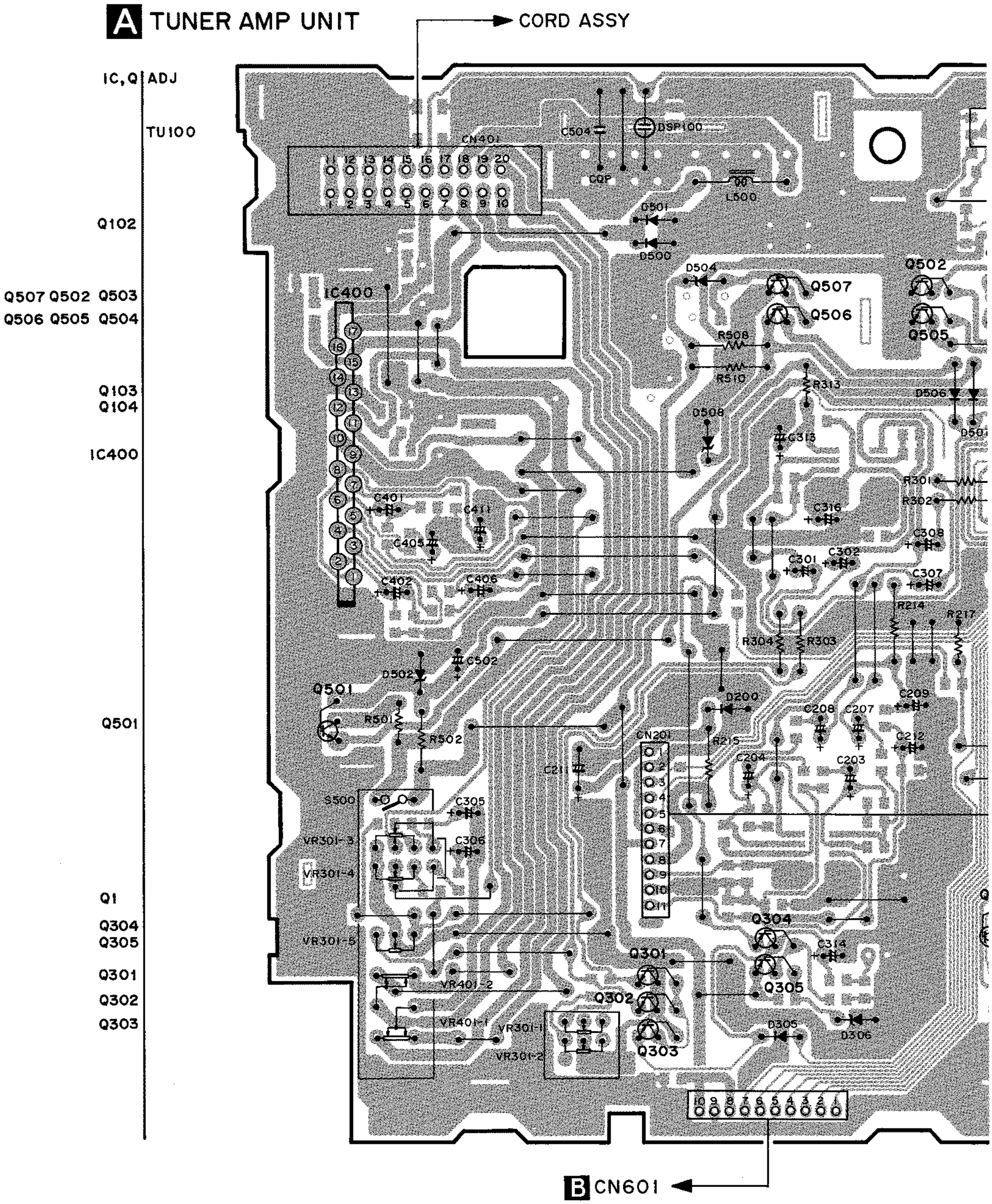
IC300

IC1

IC200

Fig.12

● KEH-1050QRS/X1M/ES



SIDE A

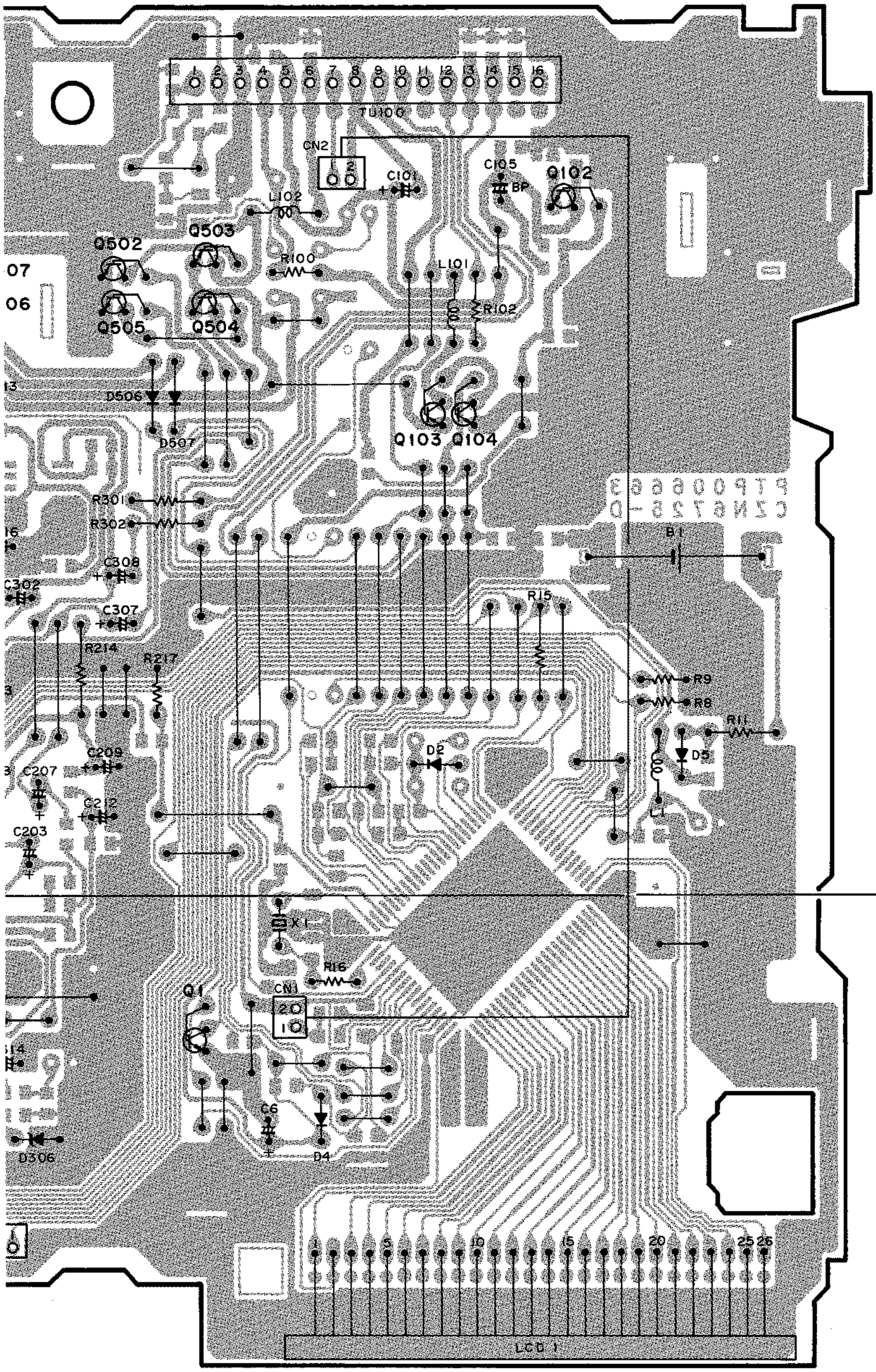
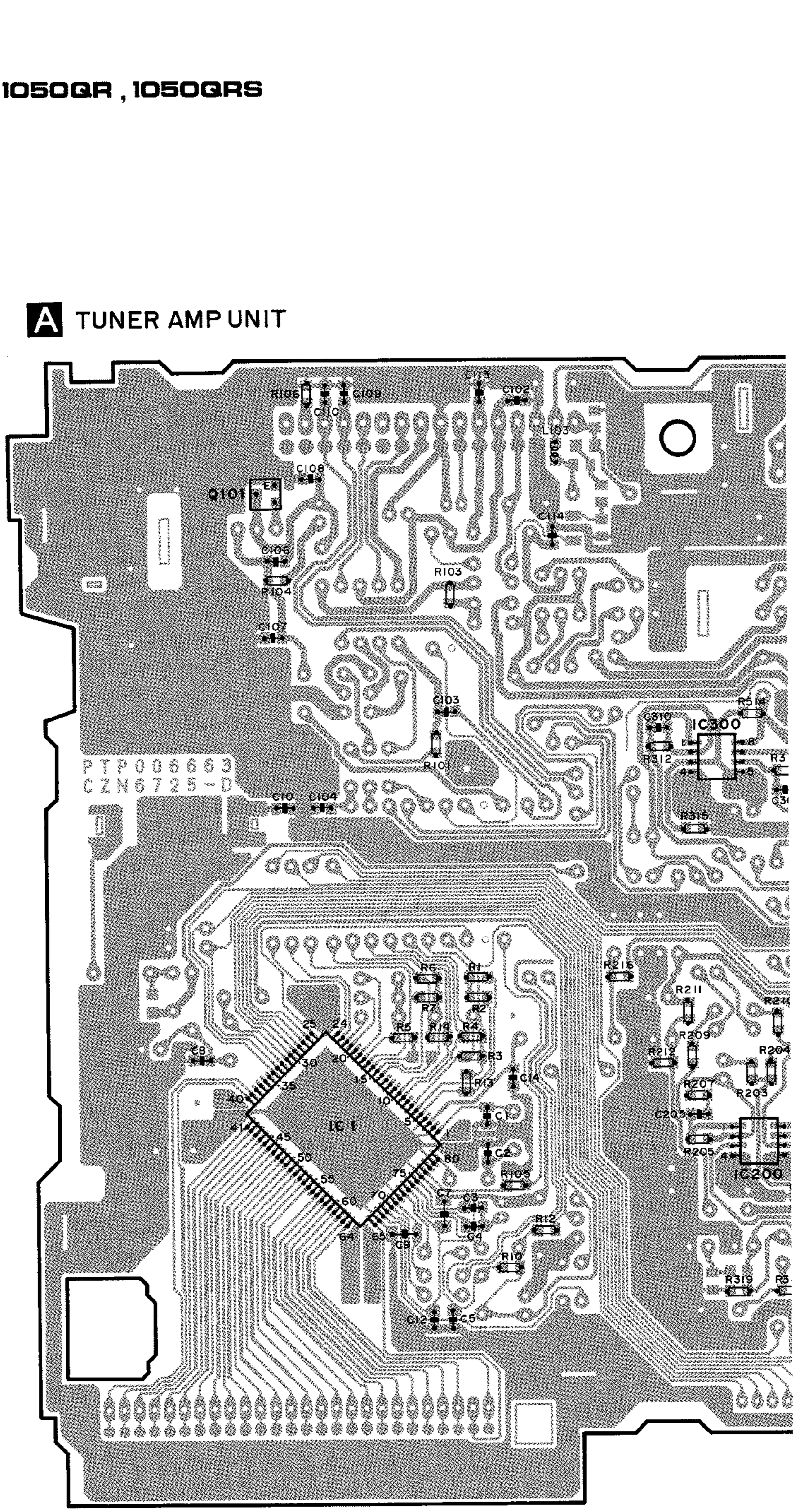

TU100
CN2
C101
C105
Q102
BP
L102
Q503
Q502
R100
L101
R102
Q505
Q504
D506
D507
Q103 Q104
R301
R302
C308
C302
C307
R214
R217
R15
R9
R8
R11
D2
D5
C209
C207
C212
C203
B1
CD CN202
X1
R16
CN1
Q1
C6
D4
D306
LCD 1

Fig.13

A TUNER AMP UNIT



SIDE B

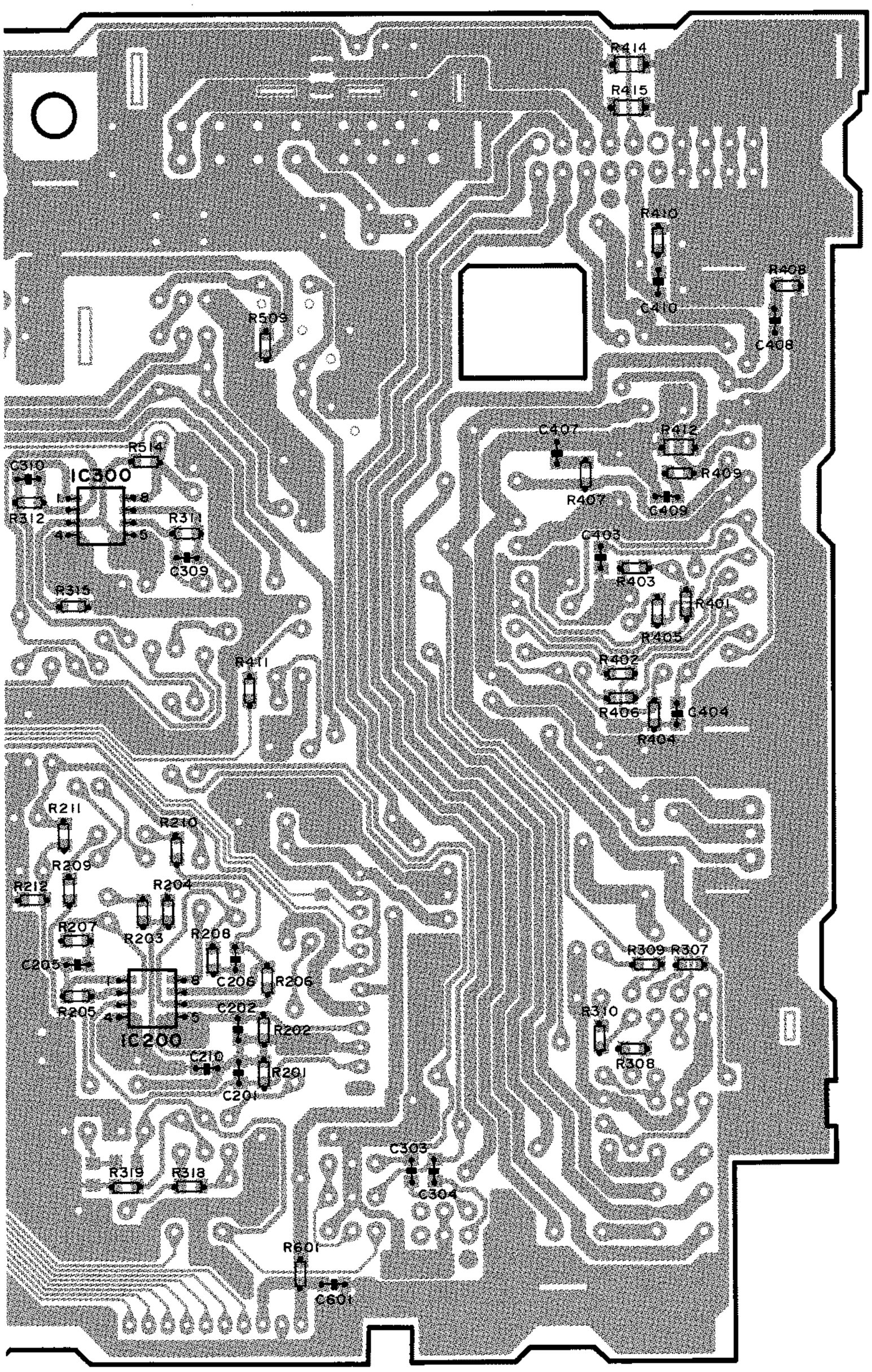

R414
R415
R410
C410
R408
C408
R503
C407
R412
R407
R409
C409
C403
R403
R401
R405
R402
R406
C404
R404
R411
R514
C310
IC300
R312
R311
C309
R315
R211
R210
R209
R212
R204
R207
R203
R208
C205
C206
R206
R205
C202
R202
IC200
C210
R201
C201
R309
R307
R310
R308
C303
C304
R319
R318
R601
C601
IC, Q
Q101
IC300
IC1
IC200

Fig.14

4.2 KEYBOARD UNIT PCB

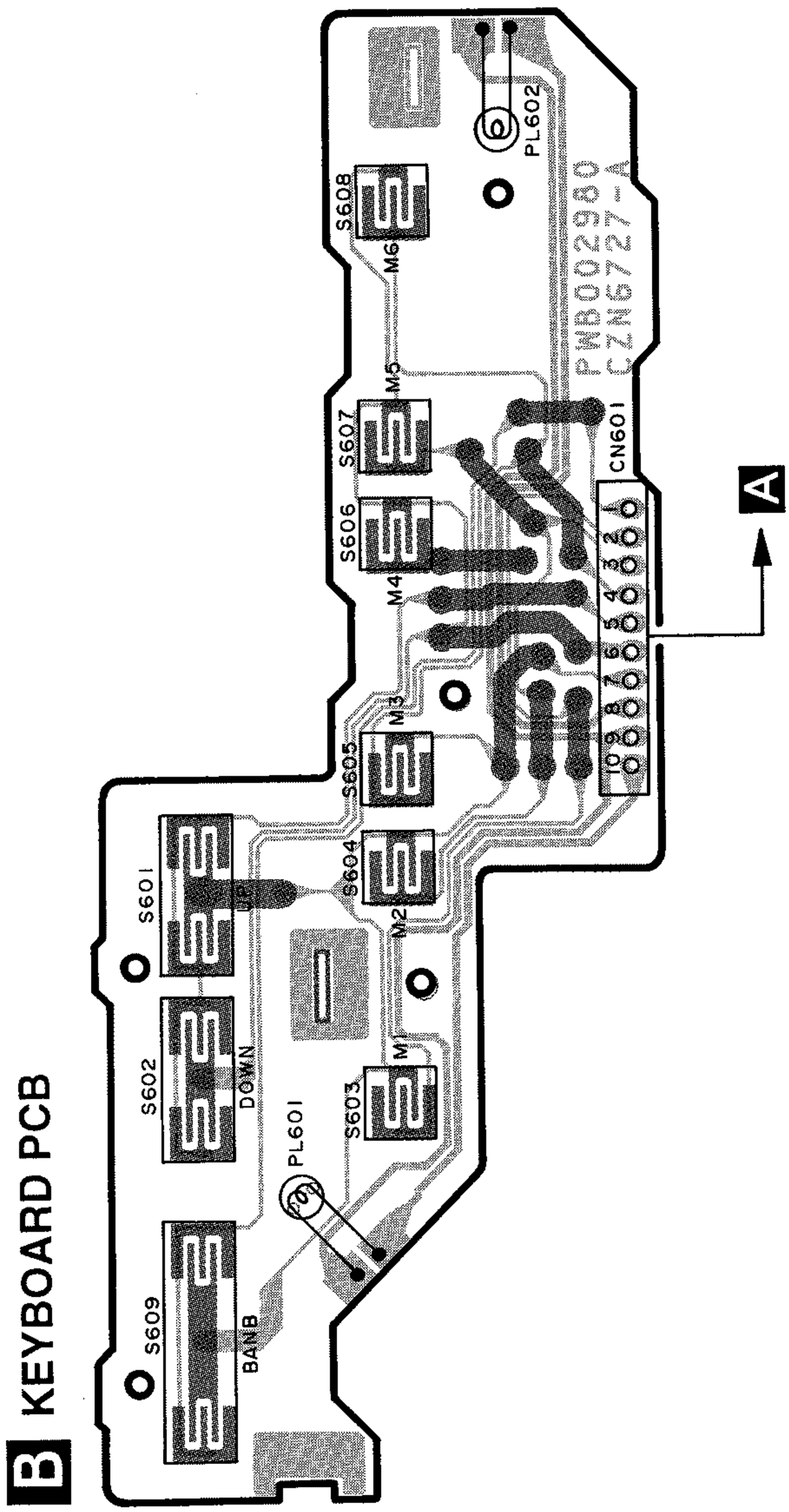


Fig.15

4.3 CASSETTE MECHANISM MODULE

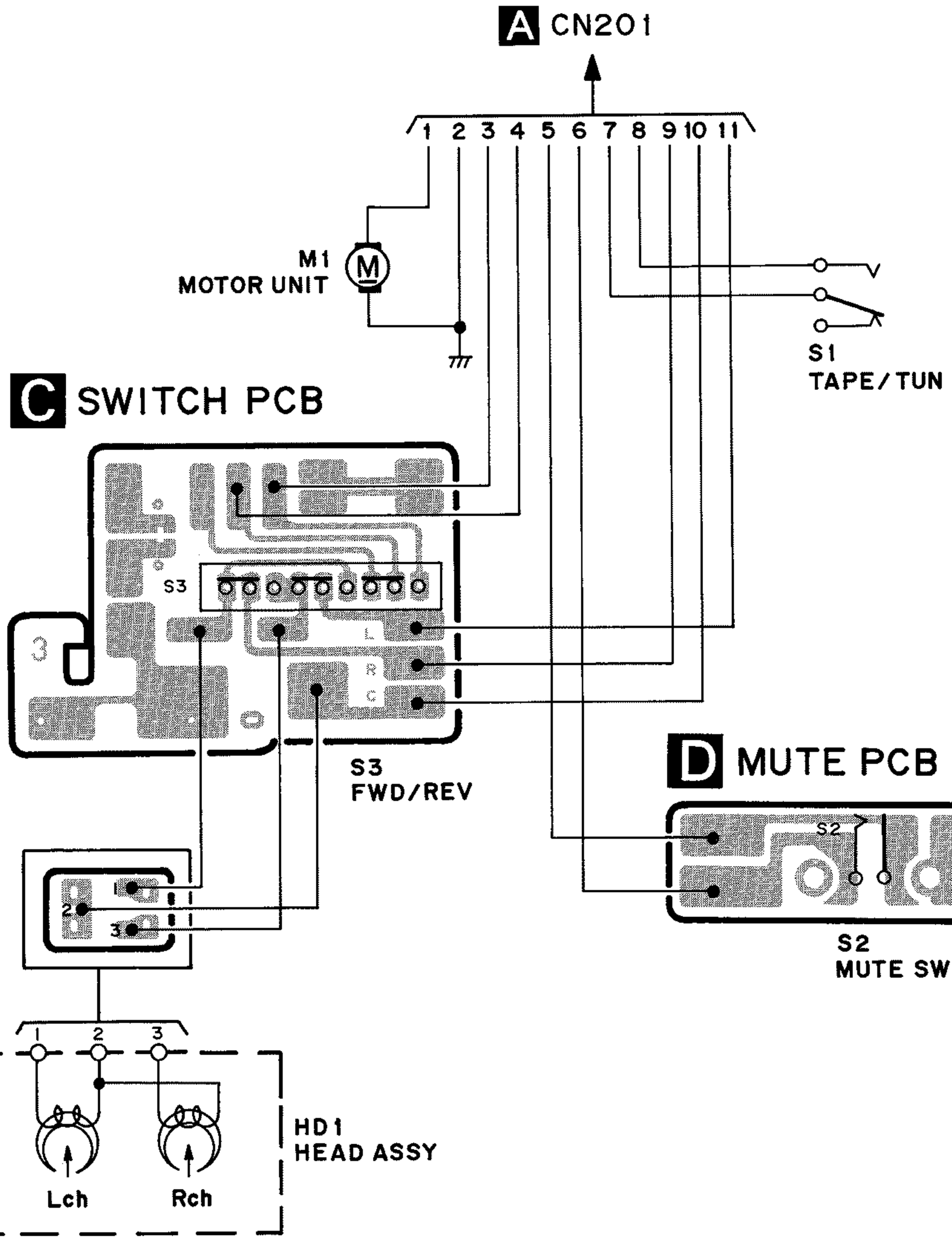


Fig.16

5. ELECTRICAL PARTS LIST

NOTE :

- Parts whose parts numbers sre omitted sre subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS.....,CCS.....,CSZS.....

Unit Number : CZW5502(KEH-1010QR/X1M/EE)
: CZW2999(KEH-1050QR/X1M/ES)
: CZW5505(KEH-1050QRS/X1M/ES)

A Unit Name : Tuner Amp Unit

=====Circuit Symbol and No.	===	Part Name	Part No.
IC	1	IC	LC72323N9384
IC	200	IC	BA4560F
IC	300	IC	NJM4565MD
IC	400	IC	TA8215H-A
Q	1	Transistor	DTC124ES
Q	101	Transistor	2SC3624(L17,L18)
Q	102	Transistor	2SC2785(EFH)
Q	103	Transistor	DTB123YS
Q	104	Transistor	DTC124ES
Q	301	Transistor	DTC343TS
Q	302	Transistor	DTC343TS
Q	303	Transistor	DTA124ES
Q	304	Transistor	DTA114TS
Q	305	Transistor	DTA114TS
Q	501	Transistor	2SD2394(DEF)
Q	502	Transistor	DTC124ES
Q	503	Transistor	DTB123YS
Q	504	Transistor	DTB123YS
Q	505	Transistor	DTC124ES
Q	506	Transistor	DTA124ES
Q	507	Transistor	DTC114ES
D	2	Diode	See Contrast table
D	3	Diode	See Contrast table
D	4	Diode	1SS133
D	5	Diode	MA729
D	200	Diode	1SR139-400
D	305	Diode	1SS133
D	306	Diode	MTZJ9R1(B)
D	500	Diode	1SR139-400
D	500	Diode	1SR139-400
D	502	Diode	See Contrast table
D	502	Diode	See Contrast table
D	504	Diode	MTZJ6R8(C)
D	506	Diode	1SS133
D	507	Diode	1SS133
D	508	Diode	MTZJ5R6(B)
L	1	Inductor	LAU101K
L	100	Ferri-Inductor	See Contrast table
L	101	Ferri-Inductor	See Contrast table
L	102	Ferri-Inductor	See Contrast table

=====Circuit Symbol and No.	===	Part Name	Part No.
L	103	Choke Coil	See Contrast table
L	500	Choke Coil	CZT2919
B	1	Battery	CZE2949
DSP	100	Capacitor with Discharge Gap	DSP-201M
LCD	1	LCD	CZA5526
TU	100	Tuner Unit	See Contrast table
X	1	Crystal Resonator 4.5MHz	CZS2914
VR	301	Volume	CZC2637
VR	401	Volume	CZC2638

RESISTORS

R	1 2		RS1/10S101J
R	3 4 14 105 309 310		RS1/10S222J
R	5		RS1/10S333J
R	6 7 12 13 201 202 311 312		RS1/10S473J
R	8 9		RD1/4PU104J
R	10		RS1/10S474J
R	11		RD1/4PU331J
R	15		RD1/4PU102J
R	16 301 302		RD1/4PU562J
R	100		See Contrast table
R	101		RS1/10S513J
R	102 217		RD1/4PU472J
R	103		RS1/10S332J
R	104		RS1/10S561J
R	106 211 212 314 315 319		RS1/10S103J
R	107		See Contrast table
R	203 204		RS1/10S390J
R	205 206		RS1/10S564J
R	207 208		RS1/10S153J
R	209 210		RS1/10S223J
R	214 313		RD1/4PU101J
R	215		RS1/2PMF3R3J
R	216		RS1/10S682J
R	303 304		RD1/4PU272J
R	307 308 411		RS1/10S102J
R	318		RS1/10S471J
R	401 402 403 404		RS1/10S562J
R	405 406		RS1/10S751J
R	407 408 409 410 601		RS1/10S2R2J
R	412		RS1/8S0R0J
R	414 415		See Contrast table
R	501		RD1/4PU4R7J
R	502		RD1/4PU471J
R	508 510		RS1/2PMF331J
R	509		RS1/10S331J

=====Circuit Symbol and No.	===	Part Name	Part No.
CAPACITORS			
C	1 2		CCSQCH220J50
C	3 4 309 310		CCSQCH101J50
C	5 8 12 103 104 107 303 304 601		CKSQYB473K50
C	6		CEAL331M6R3
C	7		CKSYB224K50
C	9		See Contrast table
C	10		See Contrast table
C	14 113 114		See Contrast table
C	101		CZC2639
C	102		CKSQYB224K50
C	105		CEANP2R2M35
C	106 108		CKSQYB223K50
C	109 110		CKSQYB393K50
C	201 202		CKSQYB152K50
C	203 204		CEAL470M6R3
C	205 206		CKSQYB103K50
C	207 208 314		CEAL1R0M50
C	209		CEAL330M10
C	210		CKSQYB471K50
C	211		CEJA221M16
C	212 316		CEAL100M16
C	301 302		CEAL2R2M50
C	305 306 307 308		CEALR22M50
C	313		CEAL101M10
C	401 402		CEHAS2R2M50
C	403 404		CKSQYB222K50
C	405 406		CEHAS220M16
C	407 408 409 410		CKSQYB104K50
C	411		CEHAS470M10
C	501		CZC2641
C	502		CZC2634
C	504		CQPA473J2A

Unit Numbe : CZW5503(KEH-1010QR/X1M/EE)
: CZW3300(KEH-1050QR/X1M/ES,1050QRS/X1M/ES)

B Unit Name : Keyboard PCB

PL	601	Lamp 14V 65mA	See Contrast table
PL	602	Lamp 14V 65mA	See Contrast table

C Unit Numbe :
Unit Name : Switch PCB

S	3	Slide Switch(FWD/REV)	1-0036-7007

D Unit Numbe :
Unit Name : Mute PCB

S	2	Switch(Mute)	1-0138-7087

Miscellaneous Parts List

S	1	Switch(TAPE/TUN)	1-0036-7034
M	1	Motor Assy	X-0036-6075
HD	1	Head	1-0036-7084-1

CONTRAST TABLE of TUNER AMP UNIT
KEH-1010QR/X1M/EE,KEH-1050QR/X1M/ES and KEH-1050QRS/X1M/ES have the same construction except for the following:

Symbol and Description		Part No.		
		KEH-1010QR/X1M/EE	KEH-1050QR/X1M/ES	KEH-1050QRS/X1M/ES
D2	Diode	1SS133	Not used	Not used
D3	Diode	Not used	Not used	1SS133
D502	Diode	MTZJ100(B)	MTZJ9R1(C)	MTZJ9R1(C)
L100	Ferri-Inductor	LAU330K	LAU330K	Not used
L101	Ferri-Inductor	Not used	LAU100K	LAU100K
L102	Ferri-Inductor	LAU100K	LAU100K	Not used
L103	Choke Coil	RS1/10S0R0J	RS1/10S0R0J	CZT2920
TU100	Tuner Unit	CZW2996	CZW2997	CZW2998
R100		RD1/4PU682J	Not used	RD1/4PU682J
R107		RD1-4PU6R8J	Not used	Not used
R414 415		Not used	RS1/8S0R0J	RS1/8S0R0J
C9		CCSCH101J50	Not used	CCSCH101J50
C10		Not used	Not used	CKSQYB473K50
C14 113 114		Not used	CKSQYB473K50	CKSQYB473K50

CONTRAST TABLE of KEYBOARD PCB
KEH-1010QR/X1M/EE,KEH-1050QR/X1M/ES and KEH-1050QRS/X1M/ES have the same construction except for the following:

Symbol and Description	Part No.		
	KEH-1010QR/X1M/EE	KEH-1050QR/X1M/ES	KEH-1050QRS/X1M/ES
PL601 602 Lamp 14V65mA	CZE2948	CZE2947	CZE2947

6. ADJUSTMENT

● Connection Diagram

NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG

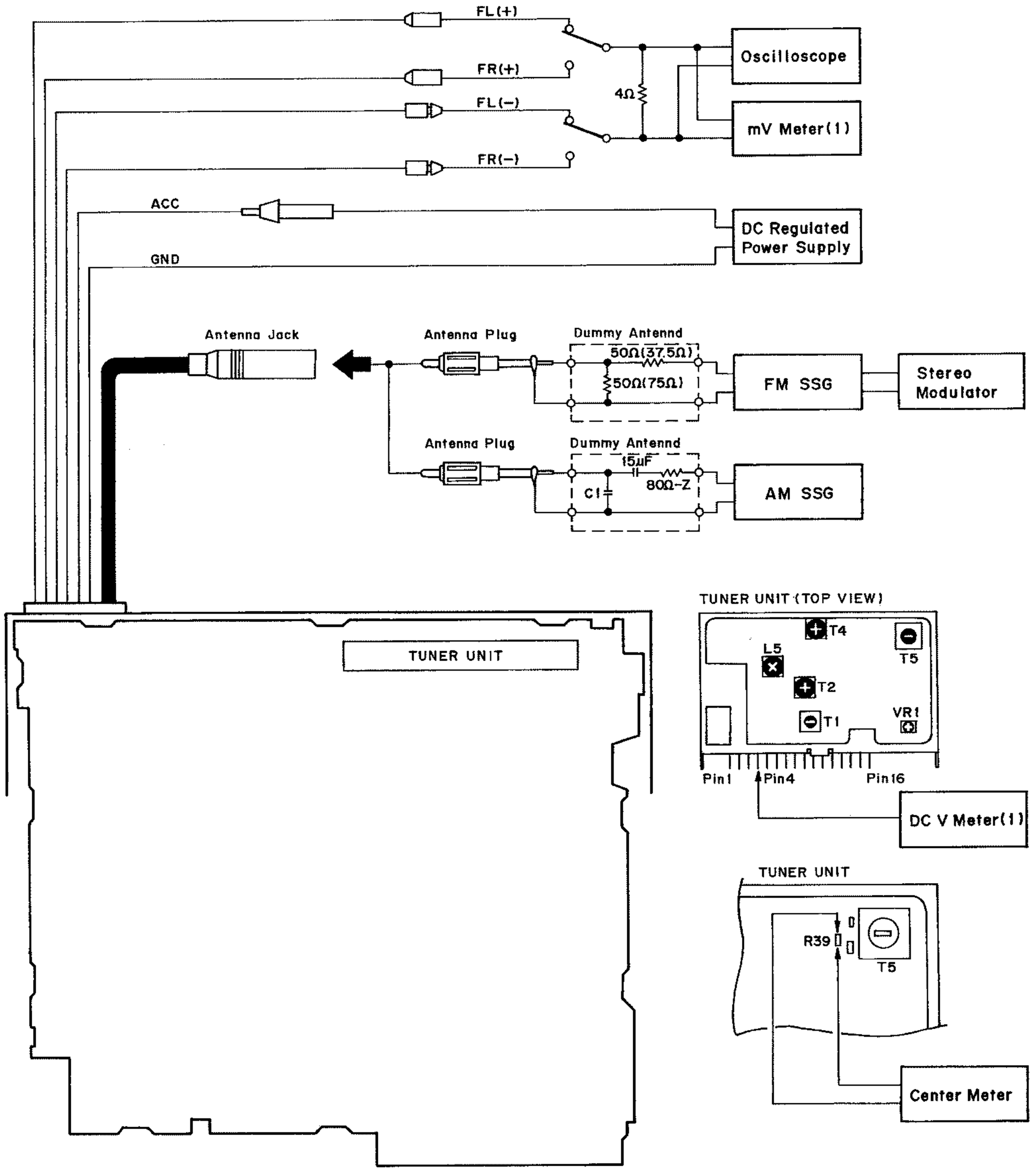


Fig.17

AM ADJUSTMENT(ES Model tuning steps at 9kHz)

	No.	AM SSG(400Hz,30%)		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dBμV)			
IF	1	999	20	999	T3,T4	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M : MONO MOD., 400Hz 100%(75kHz Dev.)
S : STEREO MOD., 1kHz L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE : Before proceeding to further adjustments after switching power ON,lat the tuner run for allow the circuits to stabilize.

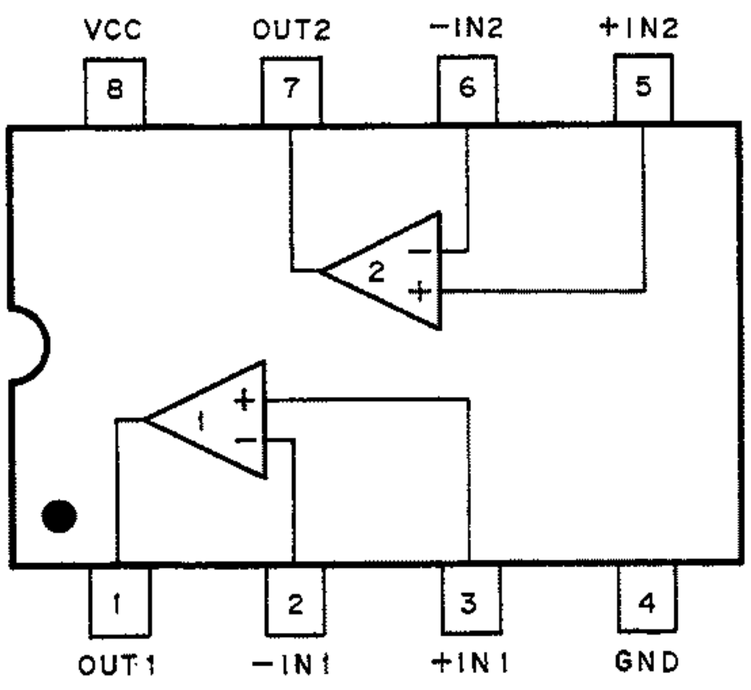
	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	- - - -	- - - -	65.0 (EE Model) 87.5 (ES Model)	T1	DC V Meter(1) :1.0V ± 0.1V
IF	1	98.1	65	98.1	T5	Center Meter : 0
ANT,RF	1	89.9	5-15	89.9	L4,L5	mV Meter(1) : Maximum
IFT	1	98.1	5-15	98.1	T2	mV Meter(1) : Maximum
Max. Sep.	1	98.1	65	98.1	VR1	mV Meter(1) : Separation Maximum

7. GENERAL INFORMATION

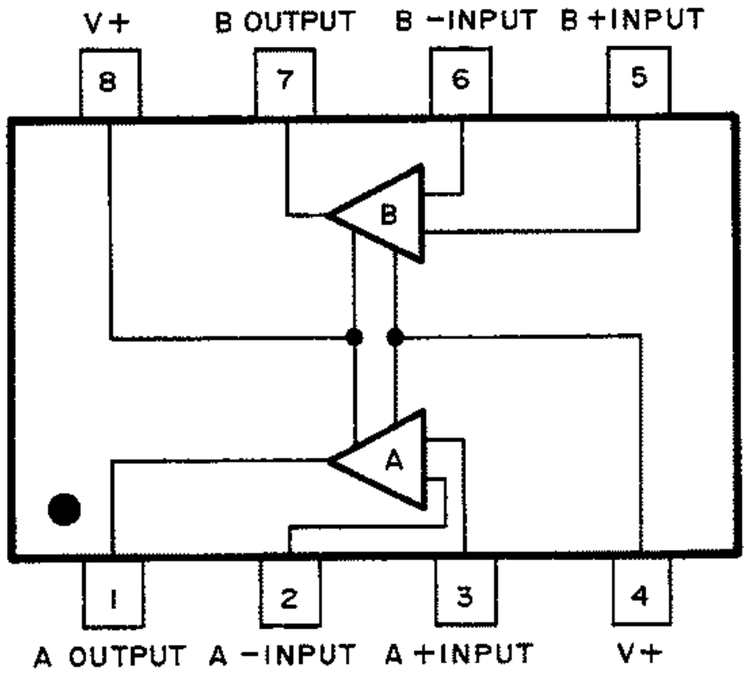
7.1 PARTS

7.1.1 IC

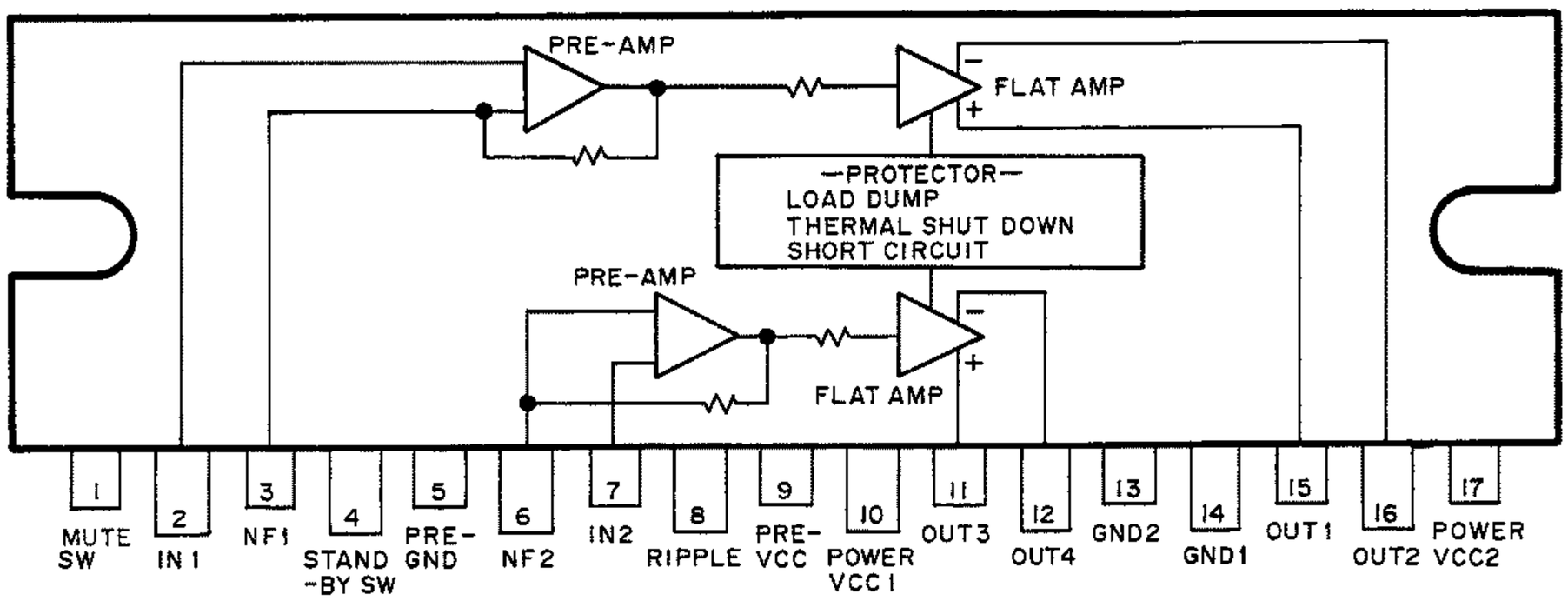
BA4560F



NJM4565MD



TA8215H-A



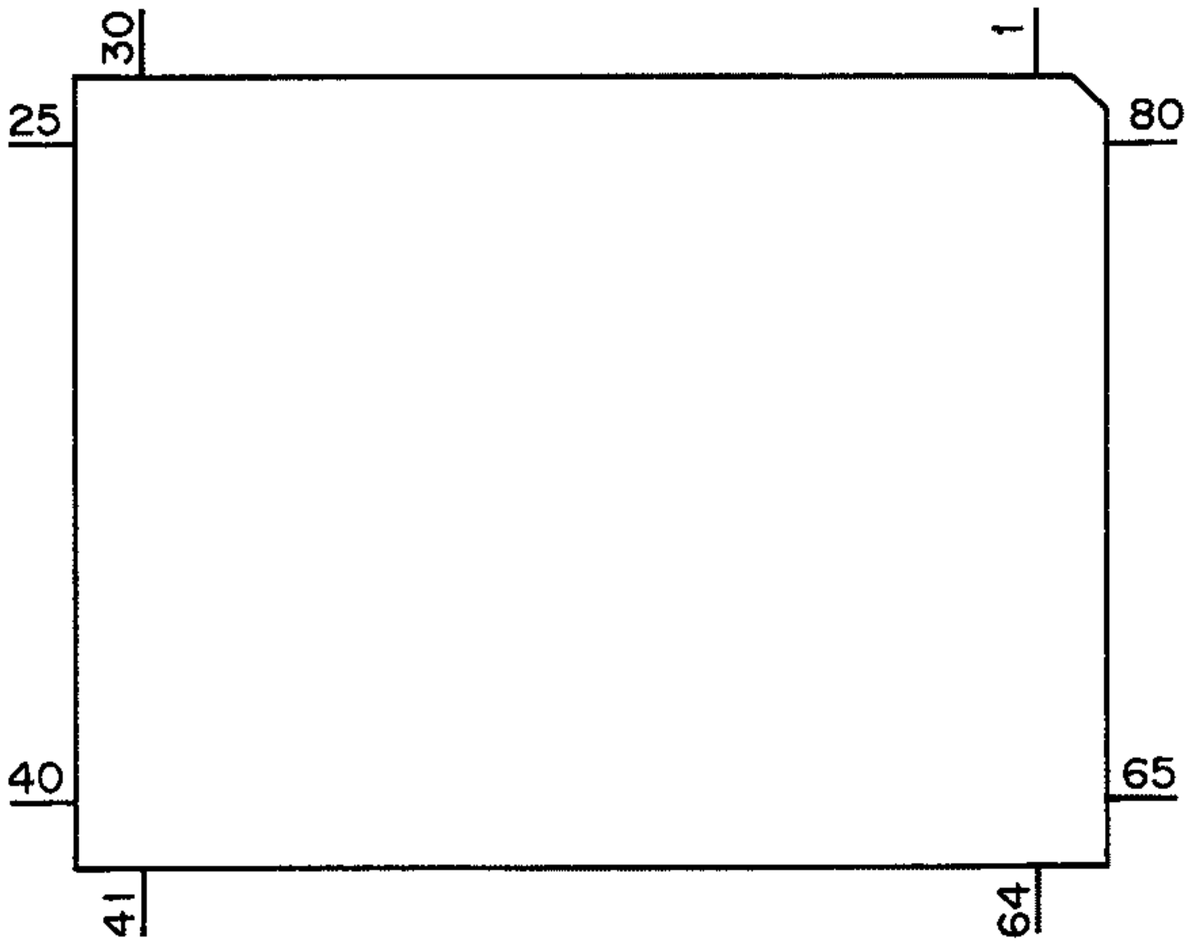
● Pin Functions (LC72323N9384)

Pin No.	Pin Name	I/O	Function and Operation
1	XIN	I	Crystal oscillator connection pin
2	-	I	(GND)
3	TAPE-IN	I	TAPE pack-in ditection input
4	N.C	I	(GND)
5	FM-SD	I	FM SD signal input
6	$\overline{\text{STEREO}}$	I	FM stereo input
7	TAPE ON	O	EQ AMP power control output
8	AMON	O	Not used
9	FMON	O	FM band select output
10	TUNER-ON	O	TUNER power control output
11	ANT-REM	O	Not used
12	POWER-ON	O	Not used
13	ILL-ON	O	Not used
14	SEEK	O	Seek output
15	$\overline{\text{FF-REW}}$	I	FF/REW detection input
16	N.C	I	(GND)
17	N/$\overline{\text{R}}$(DIR)	I	Cassette mechanism tape direction input
18	K0	I	Diode matrix input
19-22	T3-T0	O	Diode matrix output
23	MUTE	O	Audio mute output
24	$\overline{\text{AMP-MUTE}}$	O	Power amplifier mute output
25	SW-SW	O	Not used
26-30	KS4-KS0	O	Key strobe output
31	VDD		Power supply
32-33	KIN1-0	I	Key sense input
34	MUTE-REQ	I	POWER OFF input
35	N.C	I	(GND)
36-38	S28-S26	O	Not used
39-55	S25-S9	O	LCD segment output
56	S8	O	Not used
57-63	S7-S1	O	LCD segment output
64,65	COM2-1	O	LCD common output
66	N.C	I	(GND)
67	$\overline{\text{CE}}$	I	Chip enable input
68	$\overline{\text{RESET}}$	I	(VDD)
69	AM-SL	I	Signal level input
70	IFIN	I	AM/FM IF signal input
71	N.C	I	(GND)
72	$\overline{\text{BU-CHECK}}$	I	Back-up voltage detection
73	VDD		Power supply
74	FMIN	I	FM local oscillator signal input
75	AMIN	I	AM local oscillator signal input
76	VSS		GND
77	E0	O	PLL error output
78	-	O	(open)
79	-	I	(GND)
80	XOUT	O	Crystal oscillator connection pin

Format	Meaning
C	C MOS
N	N channel open drain

*IC´s marked by * are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

*** LC72323N9384**



Tuner Unit (CZW2996,CZW2997, CZW2998)

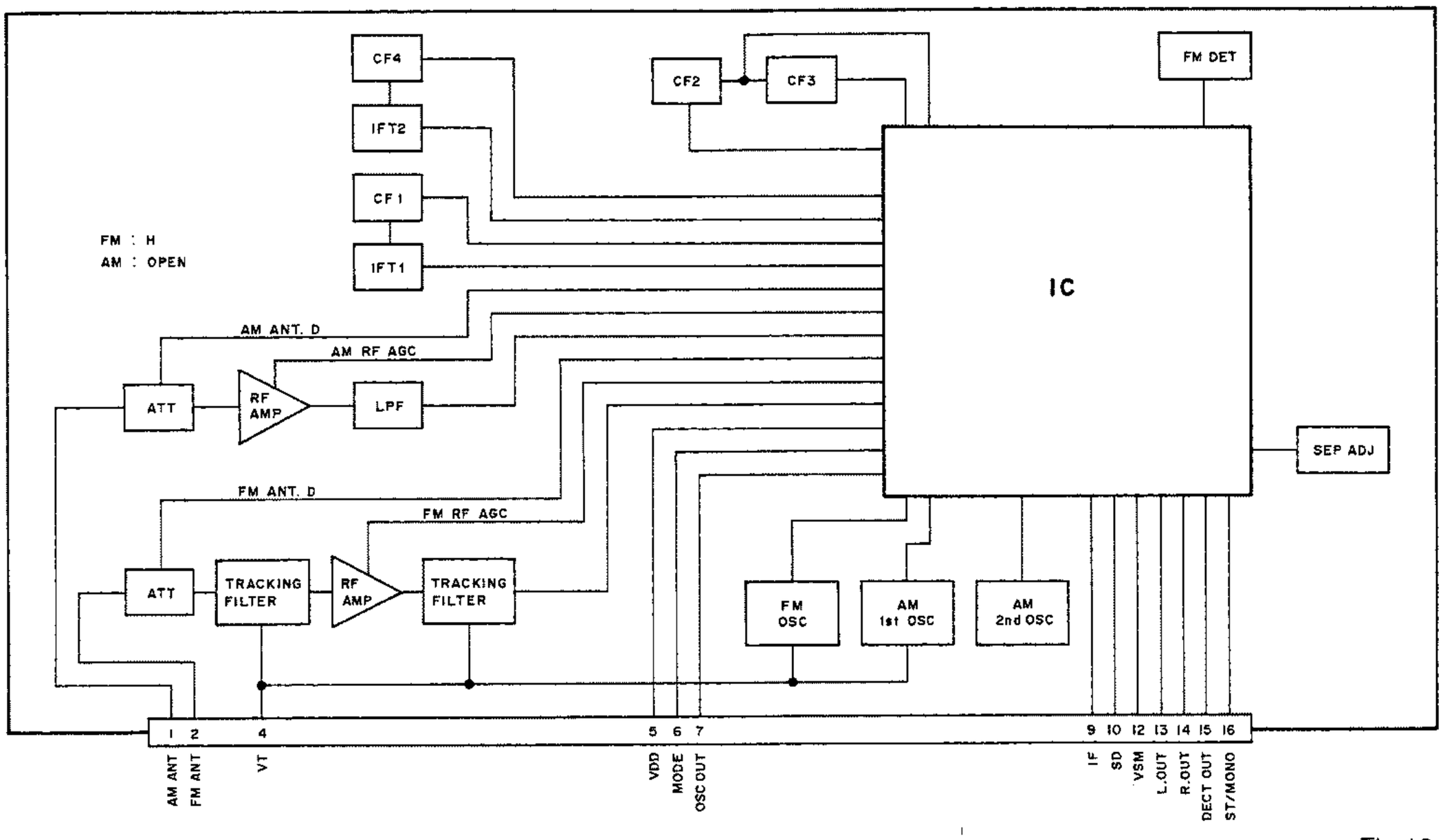
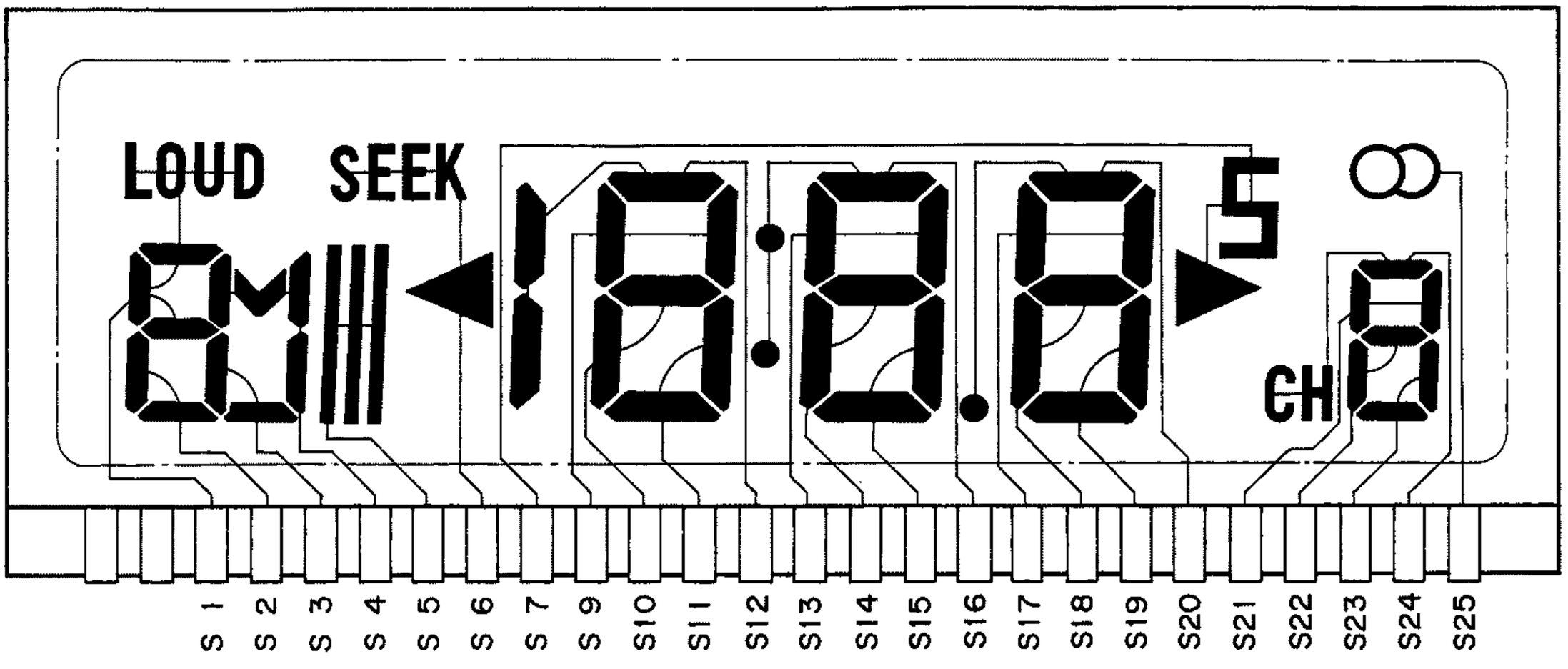


Fig.18

7.1.2 DISPLAY

● CZA5526

SEGMENT



COMMON

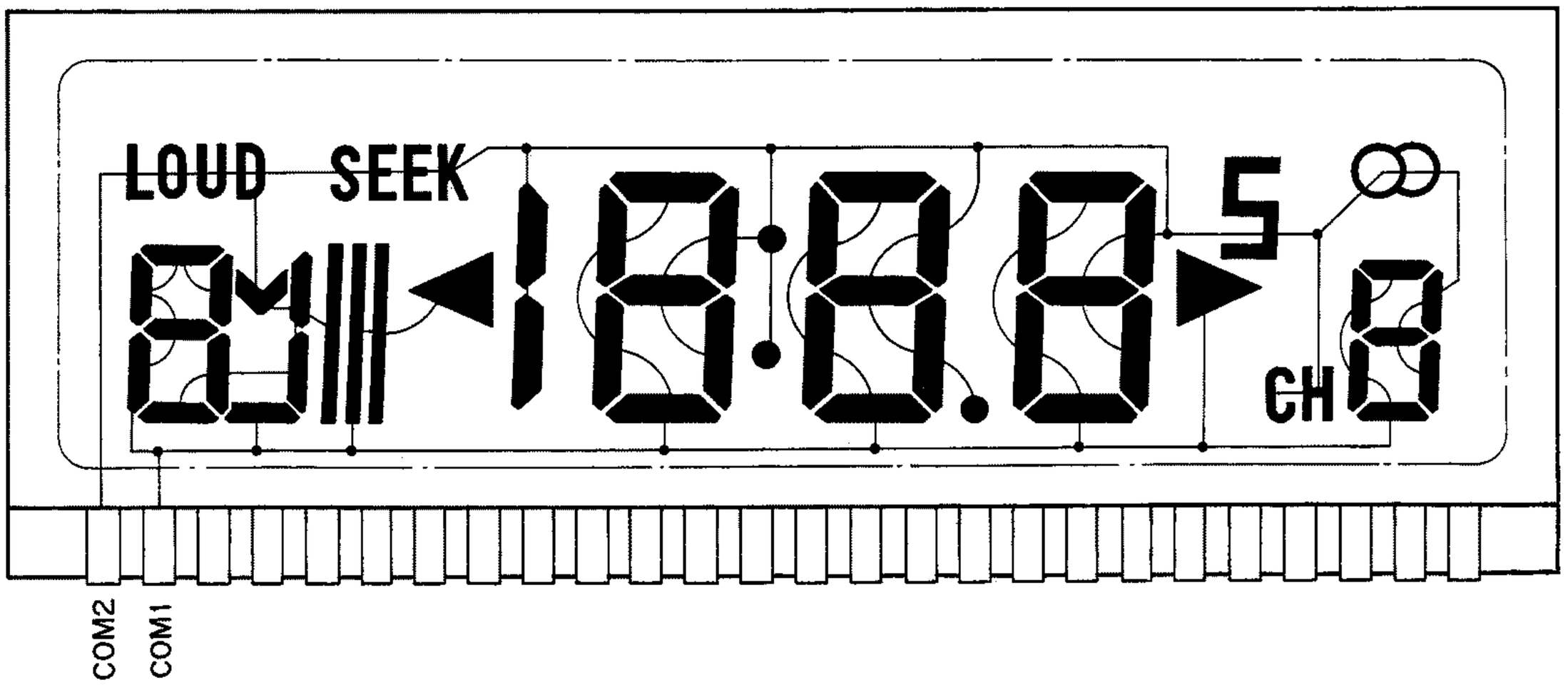


Fig.19

7.2 DIAGMNOSIS

7.2.1 DISASSEMBLY

● Removing the Case

1. Insert and turn a screwdriver to remove the case.
2. Remove the three screws A.
3. Raise the case to remove.

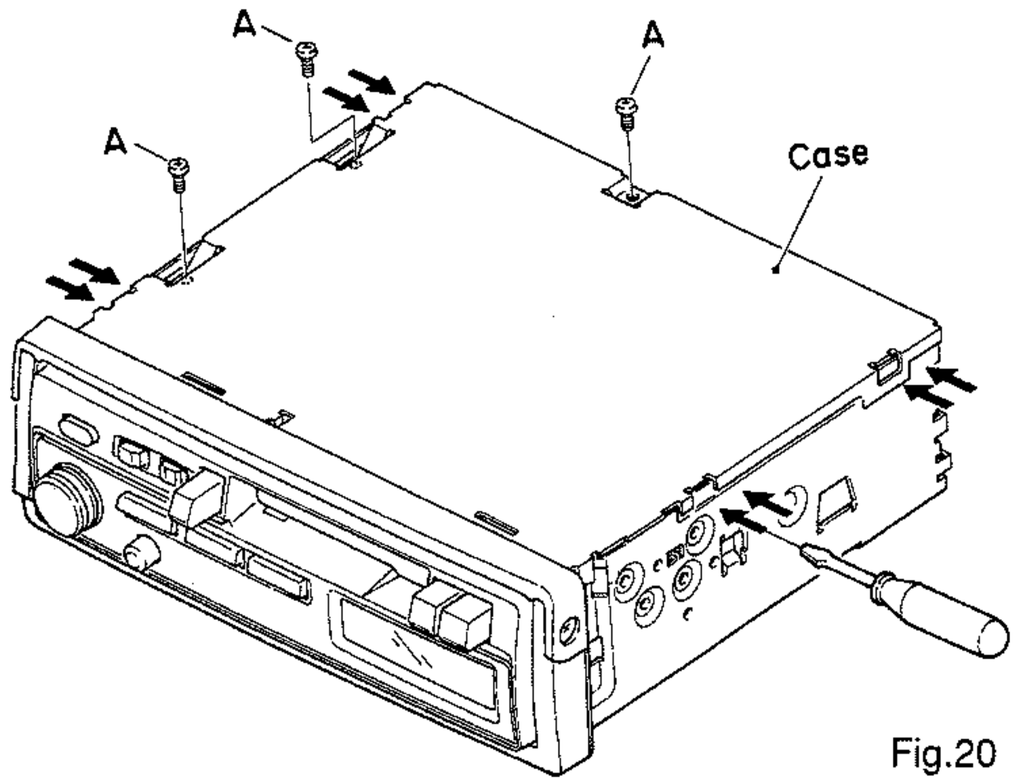


Fig.20

● Removing the Handle

1. Remove the two screws, and them remove the handle.

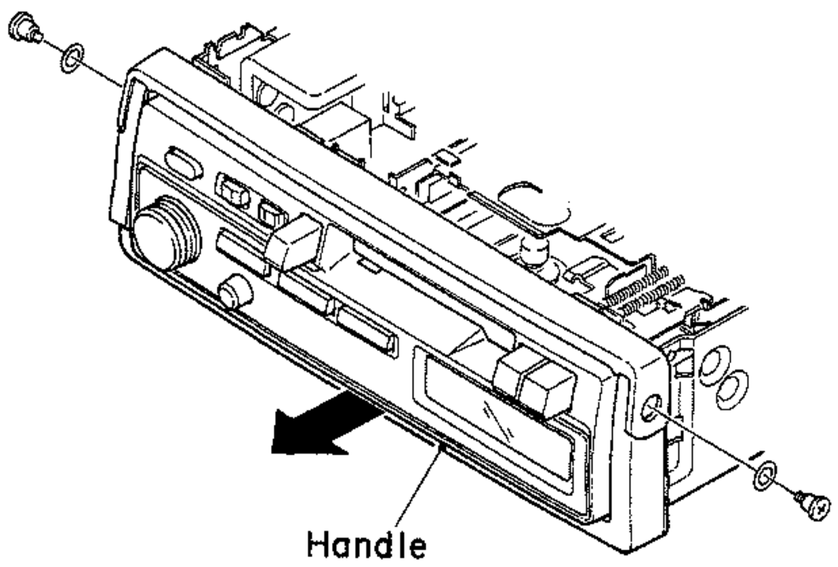


Fig.21

● Removing the Grille Assy

1. Remove the two knobs.
2. Press the tabs at four locations indicated by arrows, and then pull out the grille assy.

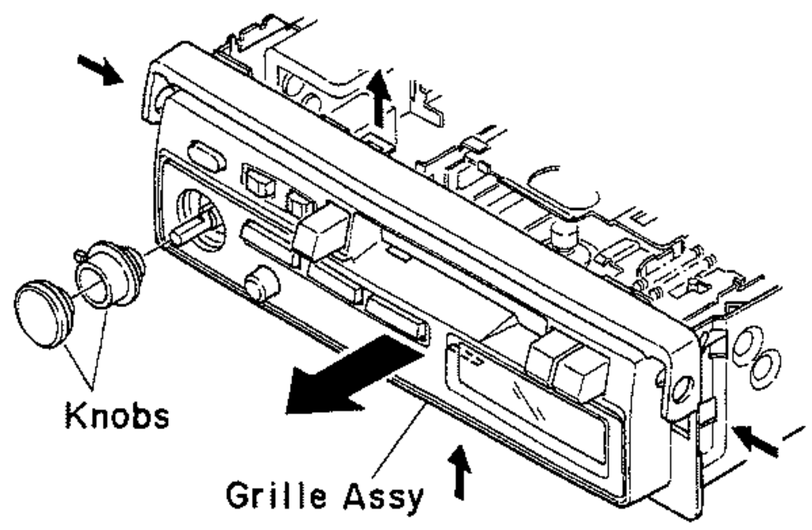


Fig.22

● Removing the Cassette Mechanism Assy

1. Disconnect the connector.
2. Remove the four screws B.
3. Remove the cassette mechanism assy.

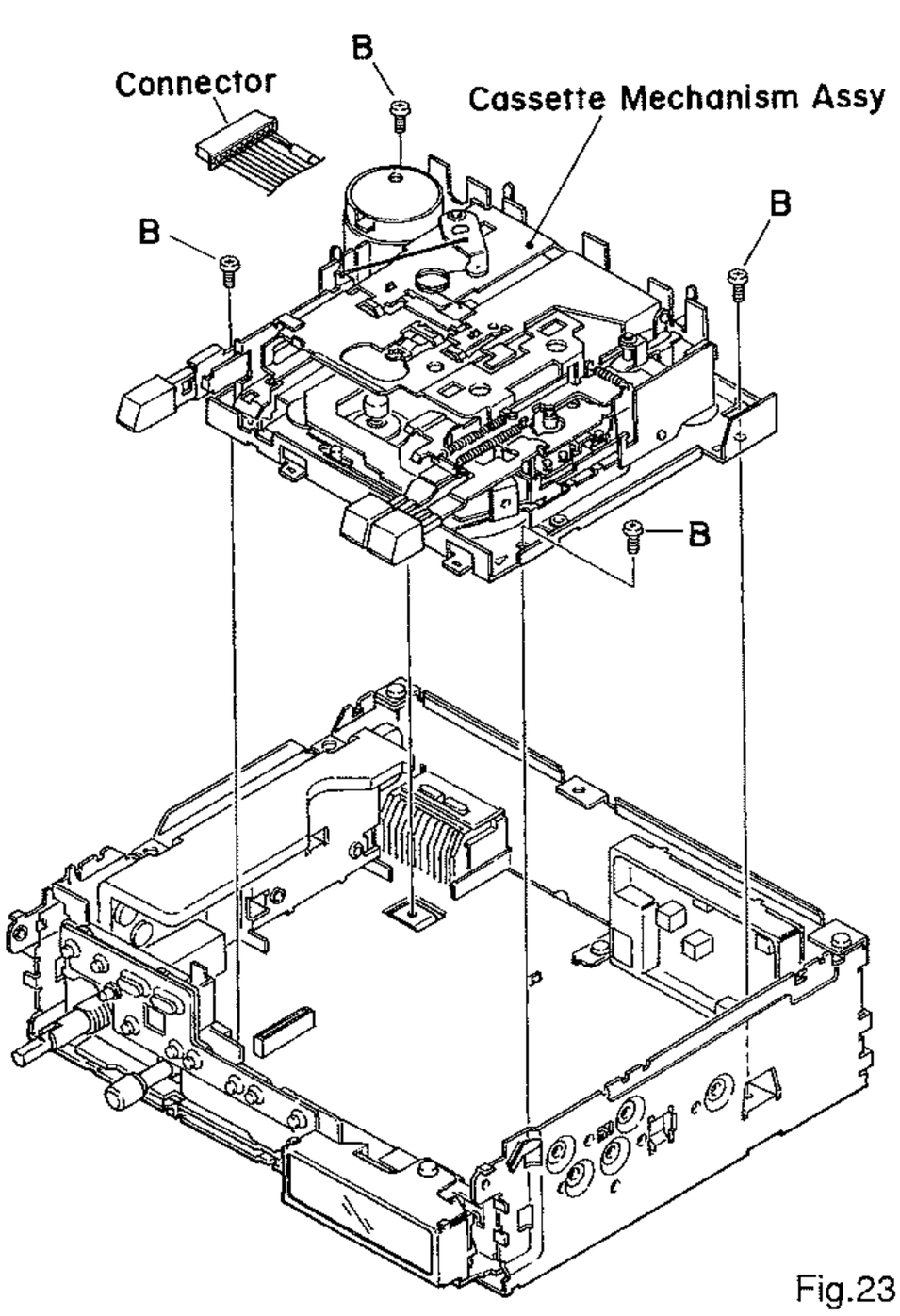


Fig.23

● Removing the Tuner Amp Unit

1. Remove the five screws C.
2. Raise up tuner amp unit to remove it from the chassis Assy.

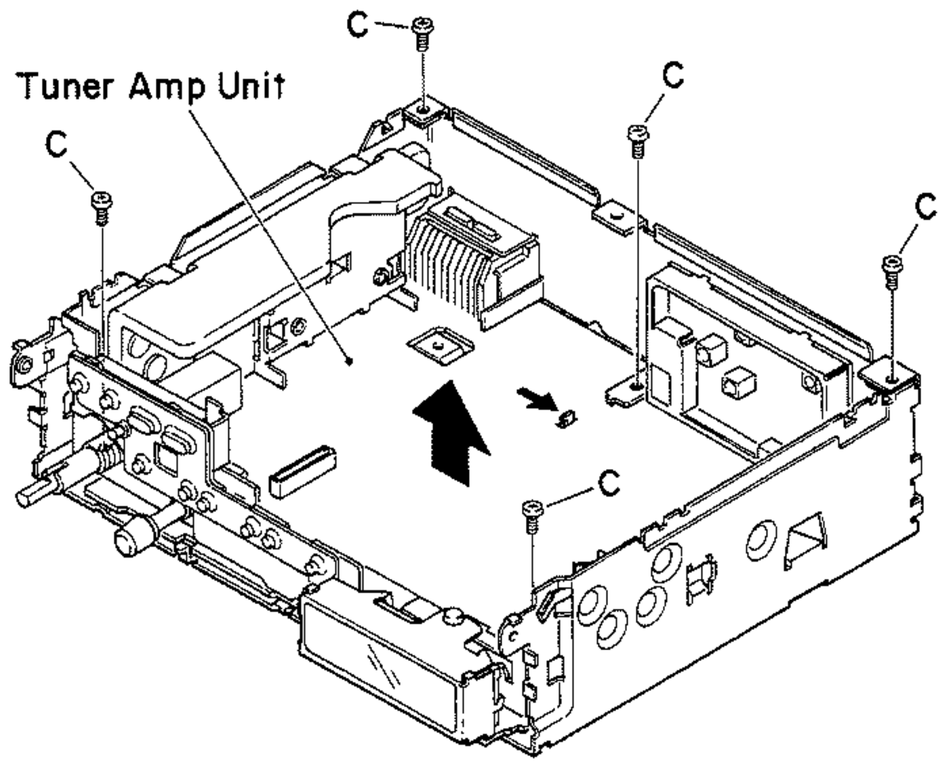


Fig.24

7.3 EXPLANATION

7.3.1 BLOCK DIAGRAM

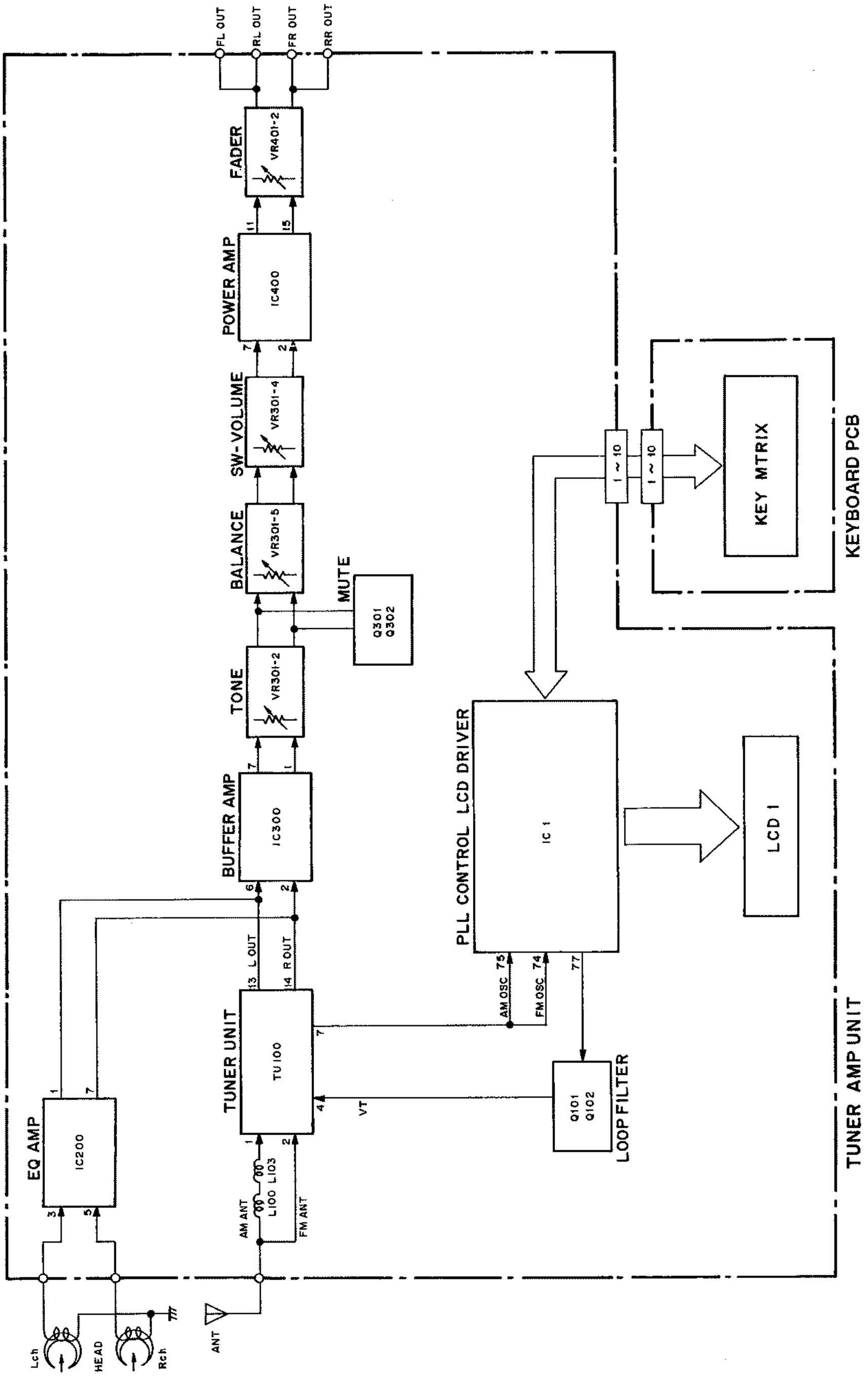


Fig.25

8. OPERATIONS AND SPECIFICATIONS

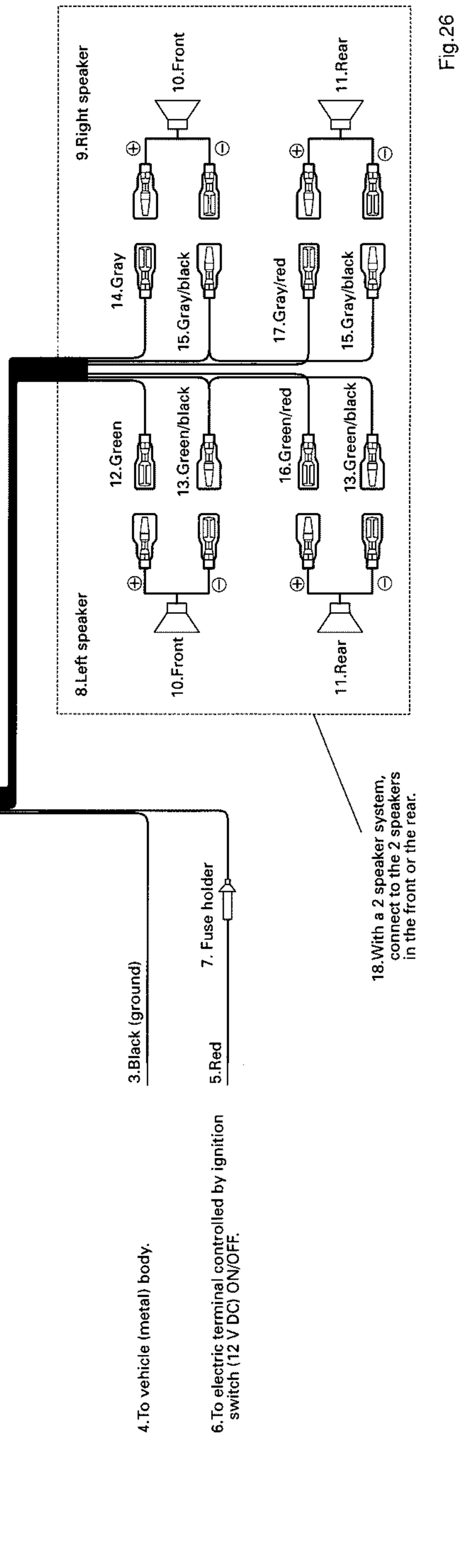


Fig.26

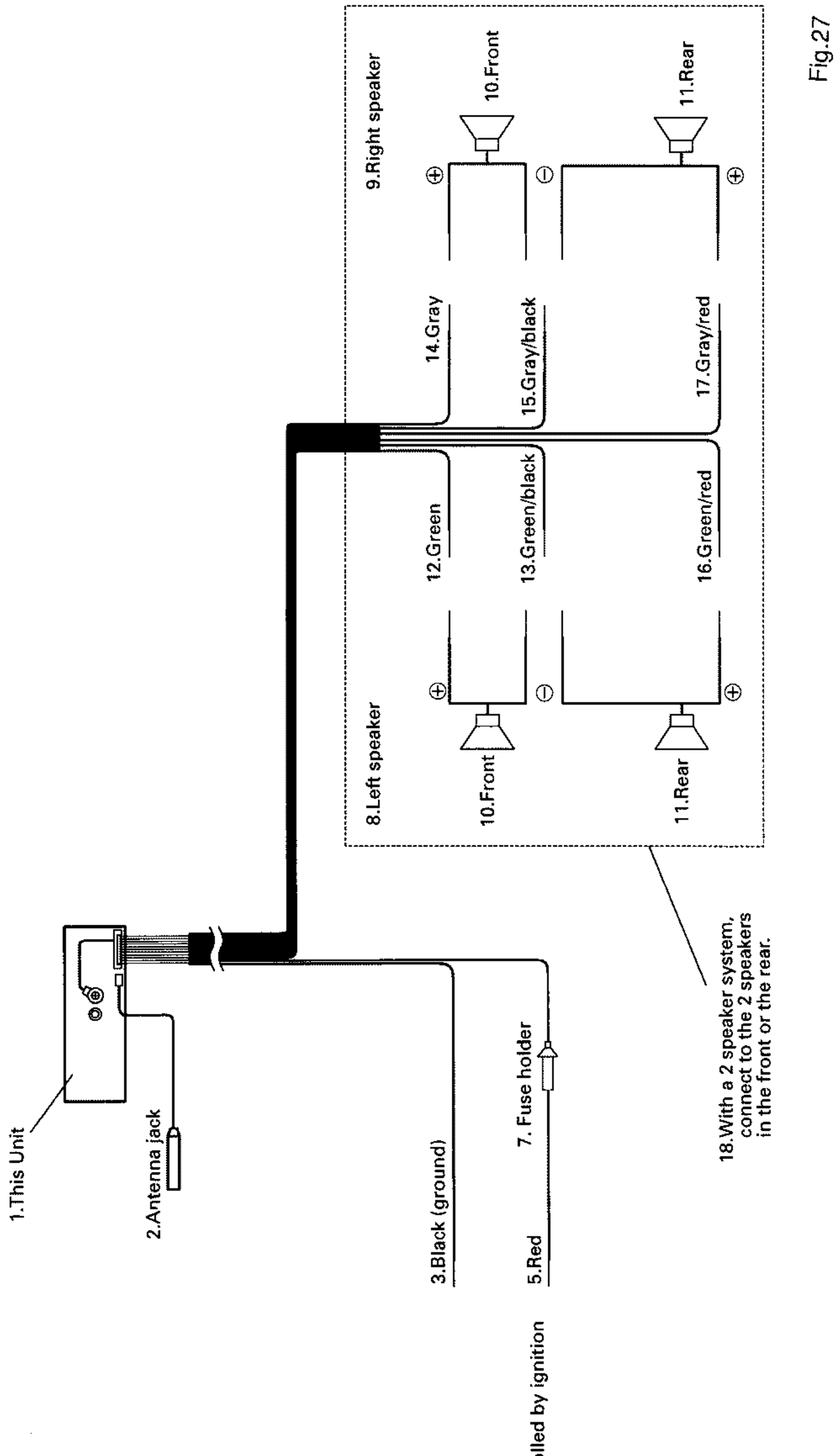


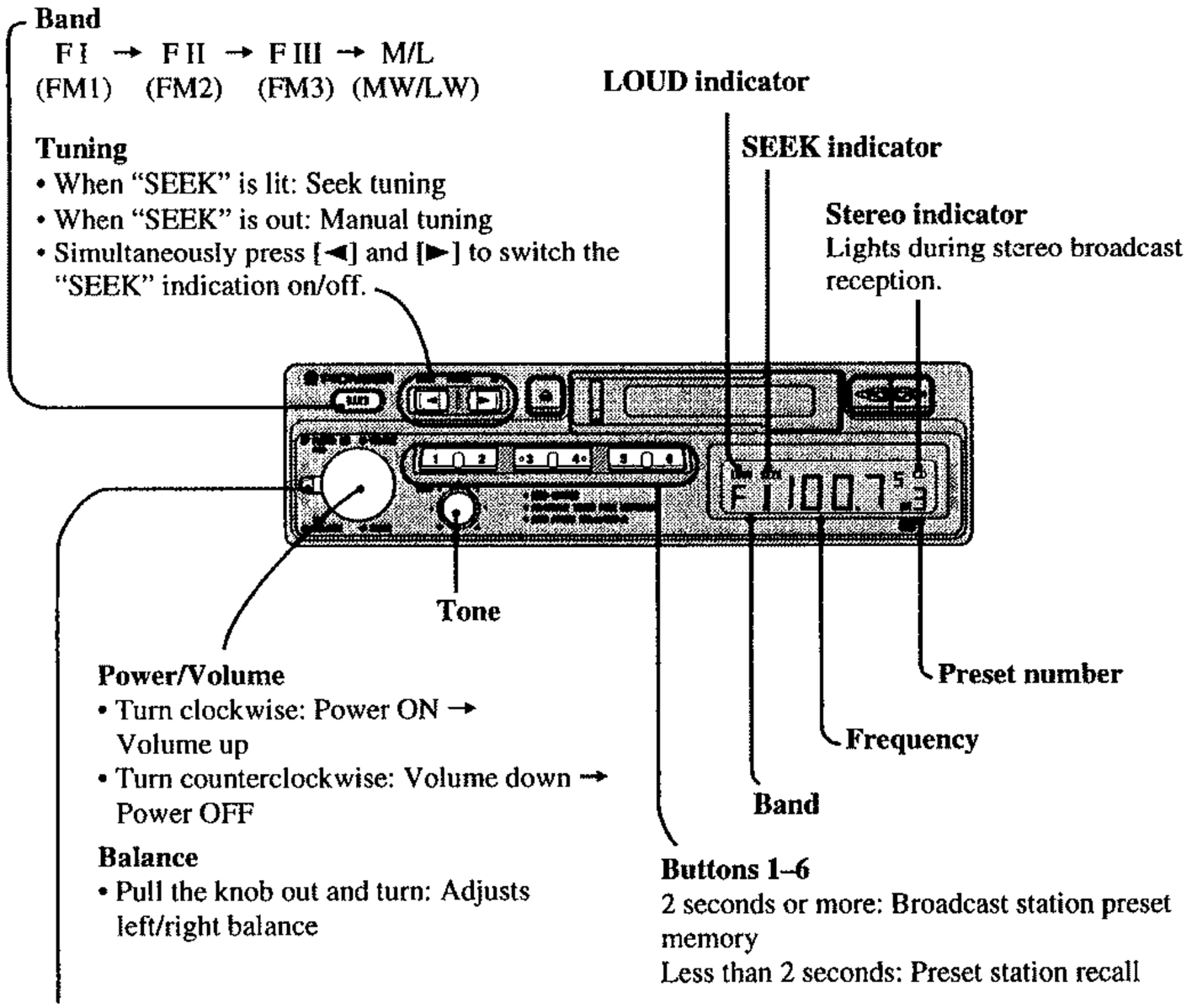
Fig.27

KEH-1050QRS

KEH-1010QR

Tuner Operation <ENGLISH>

Basic Operation of Tuner



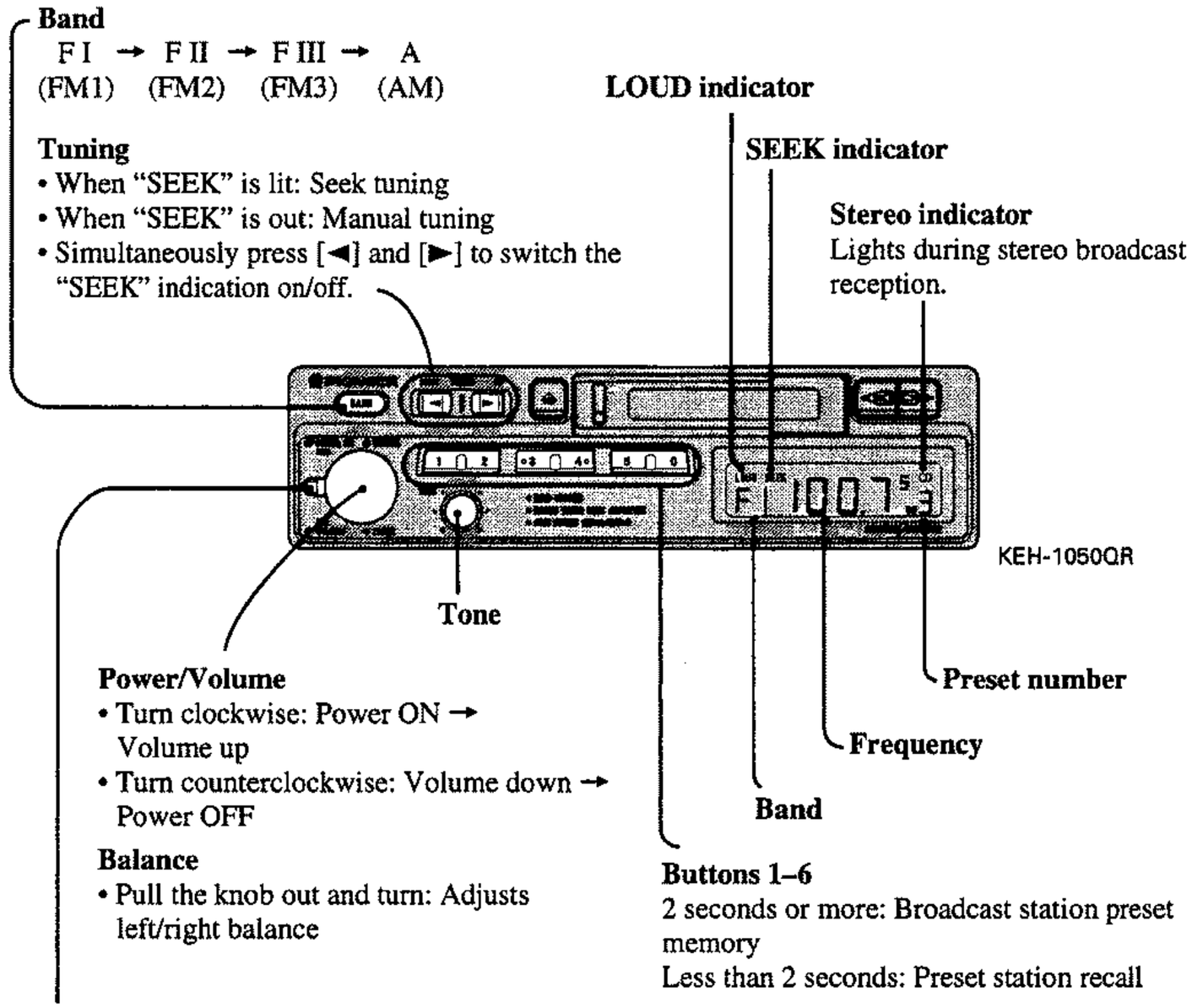
Note:
- If a cassette tape is loaded, eject it.
- The LOUD indicator lights when power is switched ON. (You cannot switch the Loudness function OFF.)
- The FM bands cover different frequency ranges as below;
  F I (FM1): 65 – 74 MHz
  F II (FM2), F III (FM3): 87.5 – 108 MHz

Fig.28

KEH-1050QR

Tuner Operation <ENGLISH>

Basic Operation of Tuner

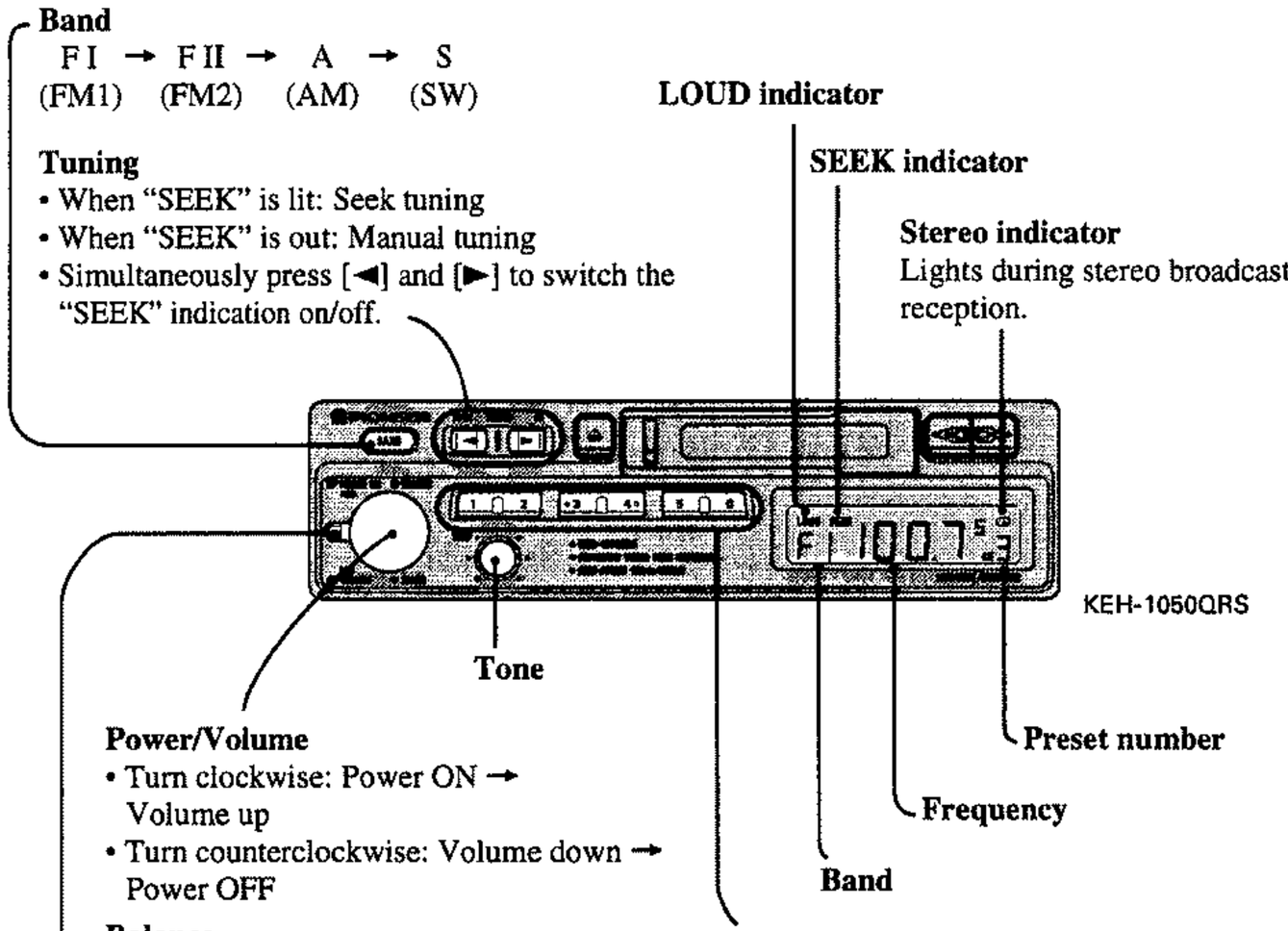


Note:
- If a cassette tape is loaded, eject it.
- The LOUD indicator lights when power is switched ON. (You cannot switch the Loudness function OFF.)

Fig.29

Tuner Operation <ENGLISH>

Basic Operation of Tuner



Note:
- If a cassette tape is loaded, eject it.
- The LOUD indicator lights when power is switched ON. (You cannot switch the Loudness function OFF.)

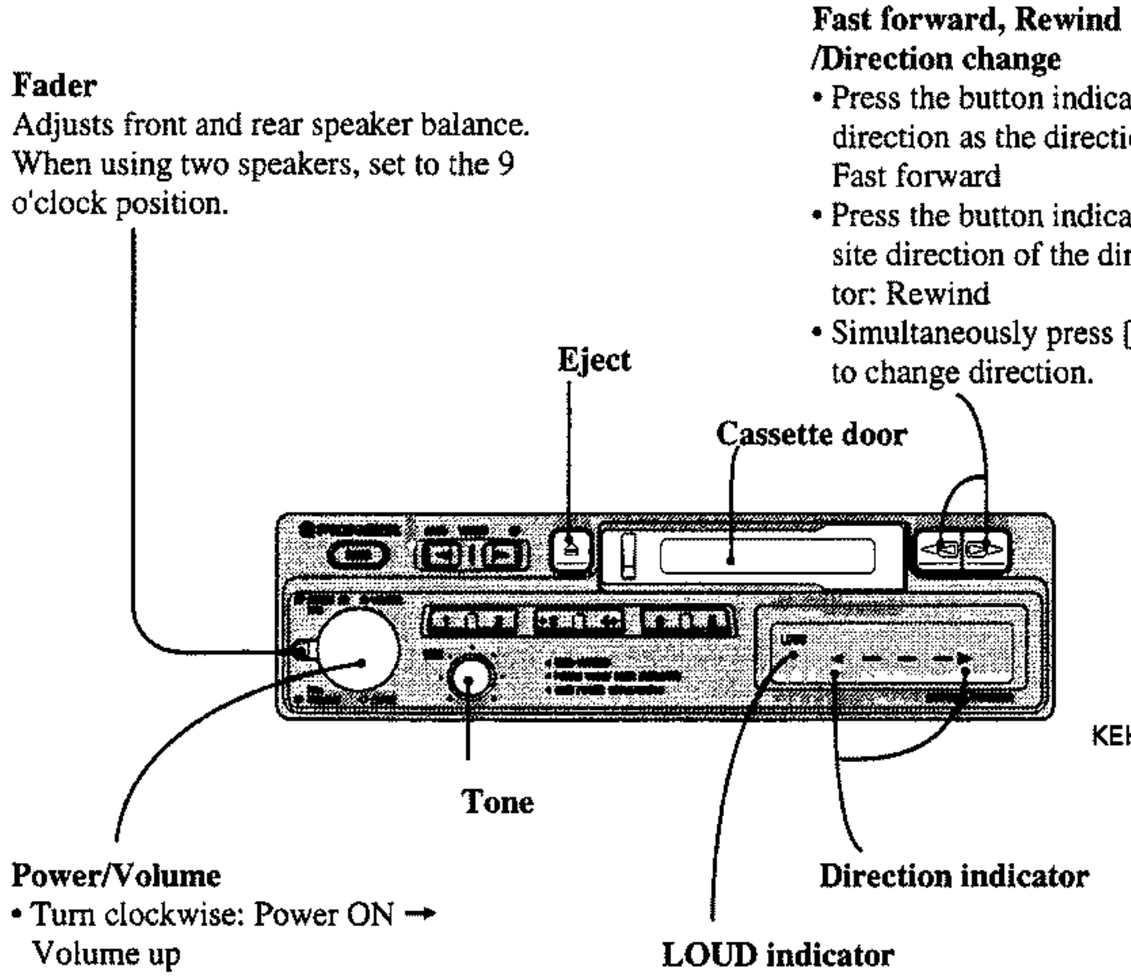
About the SW tuner

This tuner/cassette player's tuner lets you tune to short wave (SW) stations. With short wave reception, the problem of phasing sometimes occurs. Phasing refers to periodic increases and decreases in volume level when listening to a short wave broadcast from a distant broadcast station.
This phenomenon is characteristic of short wave broadcasts; it is not a malfunction of this unit.

Fig.30

Using the Cassette Player <ENGLISH>

Basic Operation of Cassette Player



Note:
- The LOUD indicator lights when power is switched ON. (You cannot switch the Loudness function OFF.)

Fig.31

Changing the AM Tuning Step <ENGLISH>

The tuning step employed in the tuner's AM band can be switched between 9 kHz and 10 kHz per step. Reset the tuning step from 9 kHz (the factory preset step) to 10 kHz when using the tuner in North, Central or South America.

Specifications	Initial Setting	New Setting
Tuning Steps	9 kHz	10 kHz
Frequency range	531 – 1,602 kHz	530 – 1,710 kHz

1. **Set the POWER switch to the OFF position.**
2. **While pressing the [◄] or [►] button, set the POWER switch to the ON position.**

Cassette Player and Care <ENGLISH>

About the Cassette Player

- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Be sure to eject the tape when the vehicle's ignition is turned OFF. Leaving the tape in the unit can deform the pinch roller causing wow and flutter during tape playback.

Cleaning the Head

- If the head becomes dirty, the sound quality will deteriorate and there will be sound dropouts and other imperfections in performance. In this case, the head must be cleaned.

About Cassette Tapes

- Loose tapes should be rewound with the aid of a pencil and unevenly wound tapes rewound with the use of the fast forward function.
- Do not use tapes longer than C-90 type (90 min.) cassettes. Longer tapes can interfere with tape transport.
- Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport.
- Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.

Precaution <ENGLISH>

- Keep this manual handy as a reference for operating procedures and precautions.
- Always keep the volume low enough for outside sounds to be audible.
- Protect the product from moisture.
- Should this product fail to operate properly, contact your dealer or nearest authorized Pioneer Service Station.

Specifications <ENGLISH>

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 6.0 A
Dimensions
(mounting bracket)
..... 182 (W) × 52 (H) × 147 (D) mm
(front face) .....188 (W) × 58 (H) × 20 (D) mm
Weight .....1.6 kg

Amplifier

Maximum power output ..... 25 W × 2 / 15 W × 4
Continuous power output ..... 16 W × 2
(DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Tone controls (Hi cut tone) ..... 0 – 16 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz) (volume: –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec.(+0.14cm/sec.,-0.05cm/sec.)
Fast forward/rewinding time ..... Approx. 160 sec. for C-60
Wow & flutter ..... 0.13% (WRMS)
Frequency response ..... 40 – 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 52 dB (IEC-A network)

FM tuner

Frequency range ..... 65 – 74 MHz
87.5 – 108 MHz
Usable sensitivity
..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 17 dBf (1.9 µV/75 Ω, mono)
Signal-to-noise ratio ..... 67 dB (IEC-A network)
Distortion ..... 0.9% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 34 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz
Usable sensitivity ..... 31.6 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 63.1 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

KEH-1050QR

Specifications <ENGLISH>

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 6.0 A (KEH-1050QR)
7.5 A (KEH-1030)

Dimensions
KEH-1050QR
(mounting bracket)
..... 182 (W) × 52 (H) × 147 (D) mm
(nose) ..... 188 (W) × 58 (H) × 20 (D) mm
KEH-1030
(DIN) (chassis) ..... 178 (W) × 50 (H) × 140 (D) mm
(nose) ..... 188 (W) × 58 (H) × 20 (D) mm
(D) (chassis) ..... 178 (W) × 50 (H) × 145 (D) mm
(nose) ..... 170 (W) × 46 (H) × 15 (D) mm
Weight ..... 1.6 kg (KEH-1050QR)
1.2 kg (KEH-1030)

Amplifier

Continuous power output is 16 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 25 W × 2 / 15 W × 4
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Tone controls (Hi cut tone) ..... 0 – 16 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz)(volume: –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec.(+0.14cm/sec.,-0.05cm/sec.)
Fast forward/rewinding time ..... Approx. 160 sec. for C-60
Wow & flutter ..... 0.13% (WRMS)
Frequency response ..... 40 – 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 52 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity
..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 17 dBf (1.9 µV/75 Ω, mono)
Signal-to-noise ratio ..... 67 dB (IEC-A network)
Distortion ..... 0.9% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 34 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
530 – 1,710 kHz (10 kHz)
Usable sensitivity ..... 31.6 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)
50 dB (±10 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

KEH-1050QRS

Specifications <ENGLISH>

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 6.0 A (KEH-1050QRS)
7.5 A (KEH-1030SW)

Dimensions
KEH-1050QRS
(mounting bracket)
..... 182 (W) × 52 (H) × 147 (D) mm
(nose) ..... 188 (W) × 58 (H) × 20 (D) mm
KEH-1030SW
(DIN) (chassis) ..... 178 (W) × 50 (H) × 140 (D) mm
(nose) ..... 188 (W) × 58 (H) × 20 (D) mm
(D) (chassis) ..... 178 (W) × 50 (H) × 145 (D) mm
(nose) ..... 170 (W) × 46 (H) × 15 (D) mm
Weight ..... 1.6 kg (KEH-1050QRS)
1.2 kg (KEH-1030SW)

Amplifier

Continuous power output is 16 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 25 W × 2 / 15 W × 4
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Tone controls (Hi cut tone) ..... 0 – 16 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz)(volume: –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec.(+0.14cm/sec.,-0.05cm/sec.)
Fast forward/rewinding time .... Approx. 160 sec. for C-60
Wow & flutter ..... 0.13% (WRMS)
Frequency response ..... 40 – 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 52 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity
..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 17 dBf (1.9 µV/75 Ω, mono)
Signal-to-noise ratio ..... 67 dB (IEC-A network)
Distortion ..... 0.9% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 34 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
530 – 1,710 kHz (10 kHz)
Usable sensitivity ..... 31.6 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)
50 dB (±10 kHz)

SW tuner

Frequency range ..... 3.2 – 25.7 MHz (5 kHz)
Usable sensitivity ..... 28.2 µV (S/N: 20 dB)
Selectivity ..... 20 dB (±5 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.